

AUDUBON MAGAZINE

The Season

and

Formerly BIRD-LORE

Science Library

Breeding-Bird Census

OCT 6 1944



SECTION II

SEPTEMBER-OCTOBER, 1944

Published by the
NATIONAL AUDUBON SOCIETY



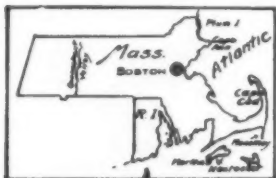
The Season

CLI May 15, 1944 to
July 15, 1944



BOSTON REGION

June was approximately normal meteorologically, but July was hot (2° above normal per day), and very dry. No satisfactory evidence is at hand



that birds were affected.

For most species the hot May and the early conclusion of the spring migration induced an early breeding season, which was

eminently successful. The early departure of many common summer residents was outstanding, and never before have I heard of so many migrants in late July. Messrs. Curtis, Cottrell and Griscom undertook an experimental census on July 23, going over the regular late May route in Essex County, starting at 4:30 a.m. We recorded 105 species only; the woods were silent and deserted, except for an occasional red-eyed vireo. The dawn chorus was reduced to the catbird, chewink, chippy and song sparrows. The swifts, bank and cliff swallow colonies, the abundant least flycatchers, the common warblers, all had already largely departed. A colony of 75 pairs of bank swallows had completed their arrival on May 17; on July 15 only one pair remained, and they had disappeared the following week.

Summer stragglers in the way of oiled or crippled sea birds and others which did not reach breeding condition are annual events, almost devoid of any scientific importance. In a slightly different category, deserving special mention, is the steady increase of summering black-backed gulls in the past ten years, entirely apart from the increase of breeding birds. Two favorable beaches on the outer Cape had flocks of 150 and 250 birds respectively this summer, a greater number than can be seen in one day anywhere in the state in winter, surely an extraordinary reversal of status.

Changes of habit and habitat resulting from continued protection are constantly producing observations, which would have astounded an earlier generation, and which were indeed unthinkable.

The dirty little Charles River in Cambridge is covered all summer by motorboats, sailboats and rowing skulls; the banks are lined with sunbathers, a narrow strip succeeded by motor highways. Two cormorants spent ten pleasant days in late June under these extraordinary conditions, roosting on the moorings, and dropping into the river only when the owners insisted on casting off or tying up their boats; rarely did they bother to fly as much as twenty yards.

The barn owls returned to the same nesting hole in Cambridge for the third successive year on May 17; young were screeching faintly on August 3. On the other hand a pair of barn owls on the Vineyard had four eggs on August 12. Short-eared owls bred as usual on Nantucket, the south shore plains of Marthas Vineyard and Monomoy.

Killdeer, woodcock and tree swallows showed a substantial increase and a particularly successful breeding season. There were far more grasshopper sparrows in eastern Massachusetts than usual. No "comeback" for the short-billed marsh wren can be reported, and at least 50 per cent of the few remaining pairs of purple martins in Massachusetts and southern New Hampshire failed to materialize.

A survey of the islets off Sakonnet Point, R. I., produced the first instance of the black-backed gull for the state. The first herring gull nest was in 1937; this year there were over 100. Excellent colonies of Arctic and least terns were found at Katama Point, Marthas Vineyard (Emerson, Griscom). A pair of mockingbirds nested and laid four eggs at Corinna, Maine.

No real flight of any southern heron has as yet materialized.

Early in July mackerel in extraordinary numbers came into the waters off Cape Cod, presumably attracted by great beds of plankton crustacea. On July 3 a sea trip yielded unprecedented returns for

so early; a pomarine jaeger; 1 Cory's, 4 sooty, 8 greater shearwaters; 271 Wilson's petrel. Blackfish were common, and two fin-back whales followed the schools of mackerel; one coming within 50 feet of the boat was at least 40 feet long, and rocked the boat so violently when it sounded that our "captain" beat a hasty retreat.

The little gull remained all summer at Newburyport Harbor; the hood began to appear June 4, it was complete July 15, and nearly gone August 13. A clapper rail was constantly heard and seen once at Ipswich July 23-August 2 (Curtis, Griscom). Two wandering skimmers at Chatham (A. Griscom, MacLay). A pure albino tree swallow at Lynnfield July 23 (Curtis, Griscom).—LUDLOW GRISCOM, *Museum of Comparative Zoology, Cambridge 38, Massachusetts*.

NEW YORK REGION

Temperatures during June were somewhat above normal and there was also a slight excess in rainfall, prevailing winds were northerly and about

normal. The first half of July was abnormally warm, the average temperature for every day in this period being above the expected mean. On several days the maximums were up in the nineties. Precipitation was negligible, only 0.14 inches falling in the fifteen days of the first half of this month. Prevailing winds were southerly and light. These extremely arid conditions have had some influence in the breeding in this region.



The closing days of migration showed a definite wave of land birds in Central Park on May 16 (J. T. Nichols), and again, from May 25 to May 29, birds were passing through in numbers of almost wave proportions. On these days the flight was composed largely of the females of those species whose males had gone through earlier, but, added to these were the olive-sided, as well as other late flycatchers, indigo buntings and Lincoln's sparrows. A peculiarity of the spring flight is exemplified by a report of more than 1000 blue jays passing westward through Orient, Long Island, on May 24 (Latham).

A heavy flight of shore birds was noted on May 17-28 on Long Island. Seventeen species, including some curlew, were reported at Jamaica Bay (Nichols), this was called by several observers the heaviest flight in that locality in the past ten years. Black-bellied plover, turnstones and dowitchers were very numerous on these days on Great South Bay

(Elliott). By July 11 the shore birds were returning in numbers; dowitchers, lesser yellow-legs and innumerable peeps. On June 18 and 19 two flocks of more than 20 double-crested cormorants were seen flying northeast over Jones Beach.

The least tern is extending its breeding colonies on southern Long Island but the common tern, due probably to ecological changes, has decreased as a breeder, particularly on the western part of the Island. Black skimmers seen, but with no indication of breeding, on western Long Island but Latham reports nesting near Orient. Herring gulls breeding on eastern Long Island and 9 great black-backed gulls seen at Oak Beach, July 11. From the eastern end of the Island come many breeding records of hawks including Cooper's, broad-winged, red-tailed and osprey. As a breeder the prairie horned lark is spreading eastward on Long Island with newly recorded nestings in southeastern Nassau County and at Orient.

American egrets arrived early, 30 at Jones Beach on June 8 (Soll); yellow-crowned night herons are now regular at Massapequa (Elliott) and also reported at Middle Island on June 22 (Latham). Both the egrets and the herons show an increase in numbers over past years. Yellow-breasted chats are definitely down in numbers on Long Island but the indigo bunting shows a marked increase in the section from Alley Pond to Mastic where, a few years ago, it was unknown. During the past winter and spring cardinals were present on Long Island in numbers but since then they have been unrecorded except for two in Port Jefferson in June (R. C. Murphy).

Rarities reported include two white pelicans over Massapequa on May 20 and on the same day, what in all probability were the same two birds, were reported at Baldwin, L. I. (D. Cooper). At Beach Haven, N. J., a ruff on July 2 (Q. and E. Kramer). An unusual bird on a more unusual date.—CHARLES K. NICHOLS, *American Museum of Natural History, New York 24, N. Y.*

PHILADELPHIA REGION

Weather for the period averaged about normal after the very warm weather during the month of May.



Migration—Migration for the latter part of May produced few marked waves—one, May 18, when many warblers passed through—another, May 21, when an unusual number of thrushes arrived. Reports of singing olive-backed and gray-checked

thrushes were frequent for a few days following the wave. Commenting on the thrush migration, Chandler Ross stated that the number of singing olive-backed thrushes, Wissahickon Valley, Pa., May 21, exceeded all records.

Nesting—From the reports of birdbanders, common and least terns, black skimmers, American egrets and little blue herons appeared in the various colonies in normal numbers and raised their young successfully. The season has been free from windstorms and high tides. A female blue-winged teal with 4 young was seen at Mannington Creek, Salem County, N. J., June 18 (Coman). A prairie horned lark's nest with 4 eggs was found at Barnesboro, N. J., June 27 (Batezel).

Populations—A "linear" bird count of a typical area in the Pine Barrens of New Jersey was taken June 11 (Jacobs, Corn, *et al*). This type of count is a fairly accurate estimate of the relative abundance of summer residents. The count was made by car along a road parallel to the Central Railroad of New Jersey from Chatsworth to Pasadena, a distance of eight miles. This road took the observers through several small clearings and one bog. The stops were made about three-tenths of a mile apart and birds seen and heard were counted. The time in the field was six hours. The list follows: green heron 1, turkey vulture 24, red-tailed hawk 1, broad-winged hawk 1, bald eagle 1, bob-white 6, killdeer 2, mourning dove 13, yellow-billed cuckoo 2, nighthawk 1, hummingbird 1, chimney swift 9, flicker 15, hairy woodpecker 1, kingbird 6, crested flycatcher 5, wood pewee 5, tree swallow 2, barn swallow 7, purple martin 9, blue jay 7, crow 19, fish crow 1, Carolina wren 5, tufted titmouse 2, house wren 3, catbird 3, brown thrasher 11, robin 9, bluebird 12, starling 10, red-eyed vireo 9, black and white warbler 4, pine warbler 85, prairie warbler 96, oven-bird 43, yellow-throat 1, English sparrow 22, red-wing 1, cowbird 11, indigo bunting 15, goldfinch 1, towhee 86, grasshopper sparrow 2, chipping sparrow 41, field sparrow 16, song sparrow 1.

Late waterfowl records—Taunton Lakes, N. J., June 10, double-crested cormorant 4 (W. and J. Wagoner), Palmyra, N. J., June 4, 1 (Moore), Collingswood, N. J., June 18, 1 (Potter); Philadelphia, Pa., June 8, brant 6 (Miller); Fort Mott, N. J., June 27, green-winged teal 1 (Coman).

Other records of interest—Holgate, N. J., July 2, ruff, satisfactorily identified (E. and Q. Kramer, *et al*); Stone Harbor, N. J., May 28, oyster-catcher 1, yellow-crowned night heron 2 (Manners, Jacobs); Westville, N. J., June 11, black-bellied plover 1, June 1, Wilson's snipe 1 (Manners); Forty Fort, Pa., May 7, lark sparrow 1 (Tracy); Rittenhouse Square, Philadelphia, Pa., May 18, bluebird 1 (Bond, *et al*).—JULIAN K. POTTER, *Collingswood, New Jersey*.

CAROLINA REGION

Coastal Section—Temperature, a few degrees above normal, a high of 104°F (June 24, Charleston) and low of 60°F (June 5 and 21, Wilmington). Rainfall



about one-third normal.

Migration—May 23, Pea Island, N. C., late, are gambel, baldpate, ruddy and white-winged scoter (MacKenzie); May 23, Charleston,

400-500 Hudsonian curlews (Chamberlain) and May 24, Romain, smaller flights (Baldwin); May 24, Sears Landing (between Beaufort and New River, N. C.) a full-plumaged horned grebe, rather unusual (Carleton); mid-May, Romain Refuge, S. C., duck hawk and (June 24) 6 American scoters (late) and July 11, 10 newly arrived coots (Baldwin) and several on July 15 at Santee-Cooper Refuge (Gray); July 3, Beaufort, N. C., unexpected are whip-poor-will and goldfinch and uncommon, 20 full-plumaged red-breasted mergansers (Coffey, Shaftesbury, Zapf); May 23, Pea Island, uncommon transient is northern phalarope (MacKenzie).

Nesting—June 5-13, Summerville, S. C., white-eyed and red-eyed towhees nesting 250 yards apart (Gadsden); early June, Charleston, new, small colony of MacGillivray's seaside sparrows found (Cutts); Romain Refuge (Baldwin) reports normal shorebird and rail nesting; May 27, Louisiana and snowy herons had 750 nests and by June 23, brown pelicans had unprecedented number of 559 nests (eggs to very large young); July 13, royal terns had some 500 nests of eggs, and about 4500 young roaming; least tern and skimmer colonies, normal; more gull-billed tern nests (25) than usual; one laughing gull nest (May 27) instead of normal three or four; black-necked stilts present (one, May 25, seven, July 12) for fifth year, again without nest discovery; several dozen white ibis present, not breeding, on Bull's Island, while Fairlawn colony (10 miles opposite, on mainland) had some 900 nests, 40% increase over last year (Sprunt); July 3, Beaufort, N. C., Virginia rail, indicates breeding some fifty miles south of the known nesting range; July 11, singing Swainson's warbler (breeding 7); July 12, Lenoxville heronry, burned over and deserted a few years ago, came back with nearly 400 nests, mainly Louisiana, little blue and snowy herons.

Casual—May 23, over Pea Island and Pamlico Sound, an immature man-o-war bird (MacKenzie, Grey, *et al*) can this be the bird seen at Charleston on May 12 (?) (Lunz, last report); June 28, Charleston, rough-legged hawk (Sprunt) only known summer record for South Carolina.

Inland Section—Temperature, normal but hot spell mid-June, 103° at Columbia (Mrs. Charles); 102° at Raleigh. Rainfall normal at Columbia and one-third normal at Raleigh, until July 14-15, when heavy rains fell at both places.

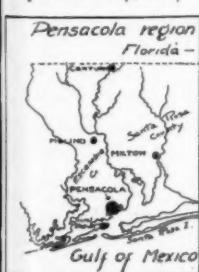
Migration—Last blackpoll warbler, Statesville (Miss Anderson) May 16; black-throated blue, Henderson (Mrs. Bachman) 18th, cedar waxwing, same place, 21st; last white-throated sparrows, Statesville, May 23, but few in Wray's garden at Raleigh till June 6, probably unmated birds.

Nesting—Columbia, blue jay fledglings, May 18; wood thrush, May 29-July 7; orchard oriole, May 28-July 13; Carolina wren again nested in moving machinery and raised young; crested flycatcher young survived 103° temperature in gourd and left nest next day; three pairs of cardinals had 4 successful nests out of 10; purple grackle young fledged, July 3; every catbird nest failed but one; unusual number of nesting brown thrashers. At Statesville, 2 orchard oriole nests, May 26, one with young, one building; also yellow-throated vireo with eggs; oven-bird nest with nearly fledged young, June 11.

Unusuals—Dickcissel singing on wire, between Chester and York, S. C. (Sprunt); immature cormorant, Raleigh, June 1 (Mrs. Simpson) and another at Spartanburg, June 11 (Cannon); female orchard oriole with black throat built a nest and raised brood in company with full-plumaged male at Columbia (Mrs. Charles); common loon in summer plumage at Spartanburg for several days around May 20.—E. B. CHAMBERLAIN, Charleston Museum, Charleston, S. C., and C. S. BRIMLEY, N. C. Department Agriculture, Raleigh, N. C.

PENSACOLA (FLA.) REGION

Hot weather from May 15 through June was followed by slightly subnormal temperature to end of period. May, very dry; June, rainfall 45% in



excess of normal; July, torrential rains on many days—the heaviest, 4½ inches on July 4. Upland ponds dwindled in May but were replenished later in period.

Migration—Shore-bird migration very poor, and observers barred from best beaches by military restrictions. Many species that normally linger until late May were not seen in the present period.

Departure dates—May 20, cedar waxing (Mrs. A. L. Whigham); 27th, blue-winged teal (latest ever recorded by 13 days) and sanderling (still common and in full nuptial plumage); 28th, spotted

sandpiper; 31st, barn swallow; June 4, coot (4 birds—latest ever recorded by 14 days).

Population—Least tern far below abundance of 10 years ago on all accessible beaches. At peak of abundance, this species nested in all suitable areas, with concentrations at favored spots. This year, several formerly well-populated nesting sites are not in use—but some of the best sites are in restricted areas.

Nesting—Pied-billed grebes noted in preceding report abandoned their nest with 6 eggs late in May when receding pond waters grounded the nest. A second attempt—again 6 eggs laid—was frustrated by human interference. Third nest was started but apparently never finished. June 4, blue-gray gnatcatcher seen putting finishing touches on nest (late); 11th, broad-winged hawk incubating (or brooding) closely; 17th, small least tern colony comprised 18 nests with eggs, 2 broods of young about 3 days old and one brood about 8 days old; 18th, yellow-billed cuckoo incubating closely (very late); 25th, red-bellied woodpecker feeding small young in nest and flicker still feeding a brood that could fly well; July 2, young hawk climbing out of nest of June 11 but not yet ready for flight (late, since most broods of broad-wings in this region are on the wing by July 1).

Behavior—Hooded warbler (2 males) seen and heard in song on June 18, indicating nesting—very few pairs of this abundant migrant remain to breed locally; July 2, Alabama towhee in full song (and surprisingly abundant when exposing themselves as conspicuously as they do at such times), probably indicating the incidence of a general second nesting; 8th, chuck-will's-widow last heard in song. White-eyed vireo, parula warbler, Carolina wren and tufted titmouse still in good song up to end of period. A loggerhead shrike, seen to kill an English sparrow, succeeded in carrying it away—through a paling fence, across a yard and across a street—in short flights with long rests between.

Casuals—June 11, red-breasted merganser (2 males), one herring and one ring-billed gulls seen—all three species long out of season. The ducks were undoubtedly cripples since they swam away when approached closely and made no attempt to fly. One or two gulls of each species are seen every summer, always in immature plumage.—FRANCIS M. WESTON, 2006 E. Jordan St., Pensacola, Fla.

OHIO-MICHIGAN REGION

The summer was warm, and most rains that occurred were local; so many parts of the region, particularly southern Ohio, experienced a drought of some seriousness. However, the levels of the larger lakes and reservoirs continued high as a result of the heavy rainfall in the spring.

Migration—High lake levels caused good shore-



bird territory to be scarce in Ohio and Michigan, but, where beaches and mud flats were to be found, there was a good spring flight, and a good southward flight was promised by the arrival of a vanguard July 2, a rather early date. The first week in July also brought an increase in the small numbers of American egrets in the larger marshes of Lake Erie.

Woodcock and Wilson's snipe were regrettably few this year. But, in contrast, upland plover are increasing as nesting birds in northern Michigan, and this year showed well in migration in northern Ohio. More than 50 in one field on July 24 (Brandenberg) were without precedent near Toledo.

The remarkable concentration of cedar waxwings in the Columbus area, mentioned in the last previous season report, continued to hold interest. While waxwings remained abundant until late May at Columbus (Thomas, Hicks), no great numbers were reported in any other area, and at Toledo there were decidedly fewer than usual. Most people saw only one or two individuals during the spring and early summer. This example of spotty distribution illustrates how misleading may be generalizations based on notes from one locality alone.

Population—Although the Lake Eries marshes do not produce a large enough part of the duck population to be an indicator of nesting success on the main breeding grounds farther north, it was a disappointment locally to note the poorest season in years. In several of the larger marshes not a single brood was seen where a dozen might have been seen in a day in better years. Whistling swans are common during the spring migration at Lake St. Clair, but a summering bird able to fly is an oddity; one was seen there on July 15 (Pirnie). In southern Michigan, Canada geese with young were seen May 30 (Hann) and flying birds, July 17 (Pirnie).

Common terns started toward a successful nesting (200 pairs) early in July at Little Cedar Point near Toledo. This was about a month later than the expected date, but there were no earlier attempts this year in that location. Van Camp at Toledo, who has banded the young in about 75 mourning dove nests this season, observes that the midsummer nests are much more successful than those of the spring. The white-eyed vireo continues to extend its range northward in Ohio. One was seen in May at Cleveland (Hill) and another,

possibly nesting, was observed repeatedly during the summer near Toledo (Van Camp). Among the items of local interest are the prothonotary warbler in June and pine warbler in mid-July at Dayton (Smith). A veery's nest held 4 eggs on June 12 near Toledo (Brandenberg).

Here are some notes from the jack pine country of northern Michigan: hermit thrush, Kirtland warbler and slate-colored junco with young in the nest in the first week of June (Van Tyne, Hiett); another group in the same area between May 29 and July 23 found 26 nests of the clay-colored sparrow, each with 3 to 5 eggs, and saw a Lincoln's sparrow feeding young on July 20 (Walkinshaw, Brigham, Baker, Dyer). It is interesting to turn to the other extreme of this region and to find that in southeastern Ohio near Athens, summer tanagers are more than ordinarily abundant and Bewick's wrens had a good year at the expense of the house wrens (Gier). One nest of the parula warbler was found in this same area.

Accidentals—A white pelican on May 28 near Toledo (Stearns) is the first in this area for many years. An avocet near Sandusky on June 21 (Metzger) is one of the few records in history for this region. A sub-adult great black-backed gull, which remained through the summer at Toledo, was the first ever reported here at this season. A Gambel's sparrow was banded on May 20 at Cleveland (Skaggs).—HAROLD MAYFIELD, 3311 Parkwood, Toledo, Ohio.

MIDDLE-WESTERN REGION

Temperatures during May and July averaged several degrees above normal while early June was cool. Precipitation was below average during the



period excepting central Iowa where the worst floods in 26 years occurred. East-central Nebraska received heavy rains in early July.

Hérons, etc.—A large heron rookery located on Four-Mile Island, Horicon Refuge, Wis., covers about ten acres. Great blue and black-crowned night herons and six American egrets nested in the maple, oak, ash and elm trees; the nests located about 40 feet above the ground. According to Beed, there appeared to be no segregation as to species. At least one nest of the American egret was definitely located. With the exception of the egrets which nested along the Mississippi River in Trem-

pealeau County from 1939 to 1942, this is believed to be the only other Wisconsin breeding record for these birds in recent years. Leopold and McCabe, in 15 days during May and June, on the Wisconsin River in Sauk County, Wis., 20 great blue herons while during 23 days in 1943 in the same locality, 36 were noted.

Waterfowl—Musgrove reported the wood duck migration in central Iowa as only about 40% of last year's numbers. He attributed the decrease to the early open hunting season in 1943, believing that many of the local birds were killed and that young ones failed to replace them. Floods along the Des Moines and Raccoon Rivers prevented regular visits to 29 nesting boxes in Polk County. However, the first brood to hatch was noted on July 3 when 18 young and an adult female were found while two other nests produced 13 and 9 young birds, respectively.

Hawks—Musselman believes that the four pairs of sparrow hawks which nested in the heart of the business district at Quincy, Ill., have kept the town practically rid of starlings. Competition for nesting territory was noticed at West Lafayette, Ind., by Burr when a Cooper's hawk attacked one of a pair of red-shouldered hawks. Burr failed to find any red-tails where they had previously nested.

Pheasants—Hendrickson reports that the 7-inch rain in May in central Iowa must have killed many young and destroyed nests and eggs of pheasants because of his observations at Ames of late hatches indicating re-nesting.

Rails—King, Virginia and sora rails as well as the Florida gallinule are reported by Beed as breeding commonly on Horicon Refuge, Wis. Bice and Errington found in mid-July two pairs of gallinules at Little Wall Lake, north of Ames, Iowa.

Shore Birds—Leopold and McCabe report that a peenting-ground census of woodcock on 200 acres in Sauk County, Wis., showed 10 grounds (presumably 10 pairs) as against 15 on the same area in 1943. Upland plover were reported by Musselman as definitely on the increase at Quincy, Ill., and as extending their nesting area. Mrs. McMaster observed two pairs of nesting upland plover with young on July 2 west of Belvidere, Ill. Five black-bellied plovers seen in western Sangamon County, Ill., by Roberts on May 16 were late northbound migrants. Eight species of shore birds, including 8 lesser yellow-legs, 12 least and 6 stilt sandpipers and 12 dowitchers seen by Mrs. Baldwin on July 9 at Calumet Lake near Chicago, indicate a slightly earlier than average southward migration.

Wrens—Both prairie and short-billed marsh wrens were found by Mrs. Baldwin at Green Lake near Chicago on July 9. Beed also found both species nesting on Horicon Refuge.

Mockingbird—Musselman observed that mockingbirds which were formerly a rarity at Quincy, Ill., are now nesting regularly in limited numbers and

are extending their breeding range, having been seen several times this season at Galesburg, 100 miles north. At Belvidere, Ill., Mrs. McMaster found only one bird which had remained since the fall of 1943 although it was in the same locality the previous winter.

Vireos—Three singing male yellow-throated vireos were noticed by Burr at West Lafayette, Ind., during the period and one singing male white-eyed vireo seen on June 30 very probably was defending a territory although no nest was found. Holland noticed that Bell's vireo is decreasing near Galesburg, Ill., because of the cutting of hazel brush. Mrs. H. D. Smith found yellow-throated, warbling and red-eyed vireos along the Des Plaines River, northwest of Deerfield, Ill., during the nesting season.

Warblers—Northbound migrants during late May emphasized the retarded season for this group. Verna Johnston found the most pronounced flight during the second and third weeks in May when hordes of warblers arrived; 24 species being observed at Indiana Dunes State Park on May 20. Mrs. McMaster also found 24 species, a week later than usual, at Belvidere, Ill. She noticed a waterthrush on July 26 and Musselman reported Louisiana water-thrushes as common along the creeks near Quincy. He believes the prothonotary warblers would be very common if provided nesting boxes but the house wrens disturb their nesting so much that not more than 20% of those that build nests in these boxes raise their young to maturity. Burr found the yellow-breasted chats commoner than usual with a good nesting season. A male cerulean warbler was also observed at West Lafayette, Ind., on June 30, which he believed was breeding. Burr also found a number of Kentucky warblers. Mrs. H. D. Smith found four nesting pairs of blue-winged warblers and two pairs of chats along the Des Plaines River near Deerfield, Ill.

Blackbirds, etc.—At least five Brewer's blackbirds, which undoubtedly were breeding, were found near Chicago on July 16 by Dr. Strong, Mrs. Baldwin and Harry Smith. Mrs. McMaster observed a flock of about 75 bobolinks, all birds of the year, seen in mid-July near Belvidere, Ill. She also found both eastern and western meadowlarks nesting in the same locality; the western seemingly to be the more numerous. About twenty years ago, there were only one or two localities near Belvidere where western meadowlarks were found. The movement of these birds eastward into Illinois appears to be a steady occupation of new territory since the birds are now found regularly in many localities throughout the State.

Records of Interest—Late migrants—William B. Robertson, Jr. found the red-breasted nuthatch in several localities during May, the latest report being at Carpenter Park, Ill., on May 16. He also had two records of pine siskins for May 16 when four

birds were seen at Lake Springfield and near Berlin, Ill. A total of 141 species was listed for the Springfield region by the Nature League on their May Bird Census. This total appears to have been duplicated previously by only one group in Illinois when on May 16, 1943, James O. Stevenson, Leo Couch, Vic Cahalane, Harry R. Smith and Phil DuMont found this number of birds near Waukegan. Miss Johnston observed 12 or more American pipits on a plowed field near Thornton on May 11 and 2 siskins at the Indiana Dunes State Park on May 20. Mrs. H. D. Smith found at least 2 pairs of blue-gray gnatcatchers near Deerfield, Ill. A dickcissel at Calumet Lake, Chicago, seen by Mrs. Baldwin on July 9, is unusual. These birds, while numerous a short distance west in the state, are scarce near Chicago. Beed reports 70 species found breeding on the 13,000-acre Horicon Refuge, Wis., including the yellow-headed blackbird. Musselman found that practically every one of his 600 bluebird boxes had a nest and many were used a second time. He had a report of one box believed to have been used successfully by 4 different bluebird females in 1943 and twice already this season.

Rarities—Leopold and McCabe saw a magpie at the University Arboretum, Madison, Wis., on July 19, feeding on rabbit carrion, and seen again on July 21, but were unable to collect it. Advice from Dr. Schroger indicates the likelihood of this being one of 5 magpies which escaped from the local zoological park.—ELLEN THORNE SMITH, *Lake Forest*, and PHILIP A. DUMONT, *Evanston, Ill.*

MISSOURI REGION

The unusual warm weather which began about the middle of May continued with little interruption until mid-July. Precipitation over the area



was somewhat below normal, but heavy rains farther up the valleys again caused disastrous floods on the Missouri and Mississippi Rivers. Repeated floods have caused great damage in the marshes of St. Charles and Platte Counties. Cattails and

other marsh plants have largely disappeared and many of the trees around the lakes have been killed by prolonged submergence of the roots. The only compensation is a thriving growth of cattails on some higher areas that were in cultivation several years ago.

The abrupt change from cold to warm weather about May 12 did not favor birding. After May 15, only a few late migrants as the olive-backed thrush, mourning warbler and olive-sided flycatcher were reported. Yellow-billed cuckoos were rather slow to

appear and did not become numerous until the third week of May.

Of water birds there is little to report. Small numbers of Forster's terns were seen during the middle of May. Black terns, ordinarily abundant in migration, were reported in very small numbers. The shore-bird migration was very poor—only small numbers of the more common species. Upland plovers have been present during the nesting season in a number of places over the state.

Hérons, have been seen in about normal numbers. American egrets have been present during May and June in several localities in the Mississippi bottoms and at Sunshine Lake, Ray County, about 40 miles east of Kansas City. Wood ducks are the only nesting ducks reported. A few pied-billed grebes, coots and least bitterns have probably nested in the few suitable places that escaped the floods.

The apparent increase of the red-shouldered hawk in western Missouri continues and the species is now seen regularly in localities where it was almost unknown ten years ago.

In contrast, the months of May and June have produced a rather large list of "unusuals" among the small land birds. The scissor-tailed flycatcher was seen near Lawrence, Kans., May 13 (Linton) and at Kansas City, June 17 (Werning). A pair of painted buntings was observed near Kansas City, June 21 (several observers) and the chuck-will's-widow was heard in the Quivera woods several times during June. The blue grosbeak shows a marked increase at various points in central Missouri this year. Blue grosbeaks breed commonly in southern Missouri but vary greatly in numbers in the northern part of the state. Two Bachman's sparrows and 6 pine warblers were seen on June 15, in a mixed growth of oak and short-leaved pine in Ste. Genevieve County about 60 miles south of St. Louis (Cunningham). There are no previous breeding records for these species in that locality. The vesper sparrow, at present considered a rare breeder in extreme northern Missouri, was noted repeatedly in one locality in St. Louis County during June and also at two locations about 60 miles to the west.—JAMES W. CUNNINGHAM, 702 East High St., Jefferson City, Mo.

MINNESOTA REGION

The late spring and summer so far have been exceptionally cool and wet. The only ninety plus temperatures were for a few days in late June and early July. Rain has been of almost daily occurrence—4.46 inches fell the first 4 days of June at Minneapolis, and the Weather Bureau reported 100 individual thunder storms over the state during that week-end. Mrs. Olin of Duluth on Lake Superior, reports that "May was a month of weather extremes with temperatures ranging from 23 on



May 5 to 90° on May 30, and rainfall reaching 219% of normal. June was the wettest June in the last 30 years, the rainfall totaling 6.27 inches, 160% of normal." The whole state is water-logged to a damaging extent and the rivers and streams have flooded the lowlands. Coming at this time of the year it is certain that a vast number of marsh

Nashville warbler, June 18, 4 young just hatched.

Items of Special Interest—Blue-gray gnatcatcher—This southern bird is becoming a rather frequent summer resident in the southeastern quarter of the state. Records are increasing rapidly year by year. Mr. Swedenborg in a letter dated June 2, this year, says: "We found them at three widely separated places, at Lake Harriet-Bridle Path May 11; two at Lynwood Lake in Anoka County on the 17th and, most interesting, a pair building near the spring at Purgatory Creek (Hennepin County) on the 14th. I have never seen two more active workers than this pair. They did not seem to take time out even to eat and succeeded in building a very beautiful nest about 45 feet up in an elm." *Hudsonian curlew*—May 29, on Minnesota Point, Duluth (Mrs. Olin). *Prothonotary warbler*—May 15, one seen at Lake Minnetonka (Mrs. Lyman). This warbler is a common summer resident along the St. Croix River and lower Mississippi bottomlands but is rarely seen away from such surroundings.

White-winged scoter—An immature bird was in Lake Harriet, Minneapolis, from May 8 to the 22nd (Swedenborg). *Avocet*—One spent some four hours on Minnesota Point, Duluth, on May 21 and was watched by several Duluth bird students after being located by Dr. Lakela. This was a very rare happening in Minnesota these days. *Sandhill crane*—On the morning of May 22, this year, Dr. F. R. Keating, Jr., of the Mayo Clinic, Rochester, saw a pair of adult sandhill cranes "feeding in the muck surrounding a slough" at Mayowood some 3 miles from Rochester. They were probably stray birds much behind those migrating through the western part of the state. *Brown thrasher*—All birds seem to be killers on occasion and a brown thrasher that destroyed a brood of small chipping sparrows was but falling in line with its avian brethren. The chippie's nest was close beside the door of a cottage and not far from the thrasher's nest and, in the process of throwing out the young chipping sparrows, the thrasher "was seen to thrust its bill clear through the body of one of the callow young" (Miss Ada M. Randall). *Destruction of great blue heron colony*—On June 4, this year, a terrific wind storm, approaching tornado violence, struck the upper Lake Minnetonka area, and the famous colony of great blue herons on Wawatassa Island was completely destroyed. There were over 200 birds in the colony and most of the young were well grown. All the nests and young were blown out of the trees and the old birds that survived left the island and the colony was entirely wiped out for this year. Silence reigned thereafter. The raccoon and skunk population on the island had a marvelous feast cleaning up the dead birds. (Reported by Mr. E. G. Perine who lives on the adjacent mainland).

Ducks and Geese—The great breeding grounds that supply Minnesota with the major part of its

nesting birds have had their nests destroyed.

Migration—The last article left the spring migration cut off in the middle. From May 15 to early June, birds continued to arrive and pass in goodly numbers. Mr. Swedenborg wrote "considering everything (cool, wet weather) this has been a most interesting spring migration. We have had more than the usual luck in finding birds, probably because we have spent more time walking than we have for several years. 192 species make quite a satisfactory list (26 of these were warblers which was nearly the full list for this locality). There did not seem to be any very distinct waves, the birds just drifting through in considerable numbers throughout all of May. The best days at Minneapolis were probably the 11th, 12th and 18." Mrs. I. A. Lupient at Minneapolis reported that on the morning of May 19 after a high windstorm and temperature at 45°, there was a very large movement of birds; many warblers with the redstart most numerous; several golden-wings, 2 parulas, 1 bay-breasted, several Cape Mays and others in large numbers and many flycatchers and thrashers. The next day the warblers were still passing and a hummingbird and a Lincoln's sparrow were in the garden.

Mr. Rosenwinkel of St. Paul encountered what he considered a "moderate wave" on May 20 with many warblers. Mrs. C. E. Peterson of Madison in western Minnesota reported that the migration there was in full force on May 18. She adds that the burrowing owls failed to appear this year and that kingbirds were scarce.

There was an all-day flight of nighthawks at Minneapolis on May 20 but advance birds had arrived up at Buhl on the Iron Range on the 18th (Swenson).

Nesting—The following records were reported by Mr. Swedenborg at Minneapolis: cliff swallow, May 7, building; blue-gray gnatcatcher, May 14, building; barn swallow, May 20, building; brown thrasher, May 20, 3 eggs; yellow warbler, May 20, building; wood thrush, May 23, 4 eggs; coot, May 27, eggs; black tern, May 28, 2 eggs; house wren, May 30, 4 eggs; and from Mrs. Olin at Duluth: willow thrush, June 13, 2 young just hatched, July 8, young flying;

fall duck flight lie to the north of us in Canada. So nesting conditions in Manitoba, lying directly to the north of Minnesota, are of vital interest to sportsmen and bird students in this state. A letter dated July 14, 1944, from Mr. Albert Hochbaum, author of that wonderful little book "*The Canvas-back on a Prairie Marsh*" who is located at Delta on the southern shore of Lake Manitoba, tells the story of the situation in that area during the season just passed. He writes: "The spring was the driest we ever had. In our marsh only the central bays had water and in many places the margins were separated from the border growth by wide mud-bars. All the sloughs and potholes were dry. It remained dry through April and May; then came the deluge. June had the third heaviest rainfall in history, with 8.63 inches falling during the month. This has brought the marsh back in the direction of normalcy again and, with July so far cloudy and damp, it looks as if the marsh may hold much of what it gained."

"In view of the many reports of tremendous increases in waterfowl, the spring flight through here was disappointing. The flight of mallards and pintails was smaller than last year. Canvas-backs showed a slight increase, while we had the heaviest lesser scaup flight we have yet seen. But all other species were just about the same as last year."

"Because of the reduction of water area, fewer ducks than last year remained to breed. I estimate that the population was about $\frac{3}{4}$ of last year's numbers. And last year, driving anywhere through the wheat prairie, one would find almost every farm with accommodations for a few breeding pairs of mallards, pintails, blue-winged teal and shovellers. This year the agricultural prairie is barren of ducks."

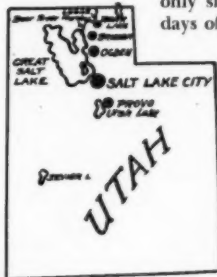
"The rains, coming in June, were too late to effect any increase in the local population. Through the early part of June, the rainfall was pretty well spread and there is no evidence of any serious loss by nest flooding. However, on June 27 a deluge ranging from 2.85 to 4.50 inches fell within a 24-hour period. Run-off was rapid and the rise in water levels precipitous. I suspect that the lesser scaup, white-winged scoter and ruddy duck, species which had yet to bring off their broods, were hit hard by flooding."

"The great concentrations of blue and lesser snow geese, which in the past have been with us from early April til early May, were nowhere in evidence this year. We had but one very small flight which went straight through without stopping."—THOMAS S. ROBERTS, Director, Minnesota Museum of Natural History, University of Minnesota, Minneapolis, Minn.

UTAH REGION

Cool and rainy sums the period to the last week in June, when summer temperatures made a fixed

appearance reaching 97° on July 1 and continuing only slightly lower the remaining days of the period. On June 5 the



Weather Bureau recorded the heaviest June rain since 1885 and for the month the heaviest since 1906.

All ponds, lakes and streams are considerably higher than for many years and must have done considerable nest flooding, but for lack of field observers few re-

ports are available.

No reports from the Great Salt Lake island rookeries on white pelicans, double-crested cormorant, great blue heron or California gull.

Hérons—Great blue, night and snowies nesting on the New State Gun Club, reported normal by the custodian, George Cox, but the white-faced glossy ibis, though abundant in the area did not show the yearly increase of past years. Their flights, however, suggest larger rookeries are in the clubs west of the New State. Marcus Nelson of the Fish and Wildlife Service reports the ibis nesting at the Ogden Bay Refuge for the first time this year.

Geese—No report from Bear River Refuge. Mr. Nelson reports 75 pairs nested on Ogden Bay Refuge and Dr. D. I. Rasmussen also of the Fish and Wildlife Service estimates at least 100 nesting pairs on the northern end of Utah Lake and Cox, 40 pairs at the New State Gun Club.

Ducks—Both Nelson and Cox noted a definite increase in number of nesting pintails, a slight increase in cinnamon teal and ruddy, with mallards, shovellers and redheads about the same but gadwalls a little less. The latter does not accord with my prediction and hopes for the good last spring showing of gadwalls.

Gulls and terns—Over half of the California gull rookery on Rock Island in Utah Lake was destroyed by waves and high water, as also the few ducks, killdeer and spotted sandpiper nesting there (Drs. L. D. Pfouts and Vasco Tanner).

Dr. A. M. Woodbury and assistants banded 250 young California gulls on artificial islands in Farmington Bay during early June and stated that a thousand more young were of bandable size.

Two colonies of Franklin's gulls, totaling 300 birds, again nested at Ogden Bay Refuge for the second year, also about 50 Forster's terns (Nelson).

Some high mountain breeders—Two rufous and 2 Caliope male hummers, observed July 9, at Brighton, on Audubon field day, suggests them as possible breeders of this region with the abundant broadtail.

Western flycatcher brooding over porch at M. I. A. building where seven other visible nests represent

as many years of occupancy; a few Wright's but Hammond's and olive-sided not observed. Wood pewee common. House and rock wrens again missing on Audubon day. Robins abundant, olive-backed thrushes in usual numbers; 3 hermit thrushes and a pair of Townsend's solitaires about maintains the yearly average for these species at that time and place.

Dr. Woodbury observed hermit thrushes feeding young in the brush at "The Firs" in Mill Creek Canyon on June 27, also on the same date a brooding western tanager.

Ruby-crowned kinglets, warbling vireos, orange-crowned and Macgillivray's warblers showed well but Audubon's were scarce.

Finches and sparrows—Cassin's purple finch with many young about, siskins abundant, only one family of pine grosbeaks and no crossbills. White-crowned sparrows very numerous about the Brighton area, one nest, July 2, full clutch, at Alta. Gray-headed junco, chipping, Lincoln's, slate-colored and fox sparrows well represented and numerically in the order named. Recorded song sparrow for the first time at Brighton.

Rarities—Immature brown pelican at Farmington Bay, May 27, carefully observed by Claude T. Barnes, but eastern or western form could not be determined.—CHARLES W. LOCKERBIE, 223 West 9th South Street, Salt Lake City 4, Utah.*

* (Correction—Re page 92 May-June issue. The report read: "Crows, still abundant in Utah County first week in March." This should read: "Crows, still abundant in Utah County until April 1. Thrushes, robins reached Bear River Refuge February 28 (W.) their peak in Utah County first week in March. (J. Hutchins) and reported in unusual numbers, thousands.")

TEXAS COASTAL REGION

The rains and moderately warm weather previously reported continued throughout the first week of June. Thereafter, very little rain fell until the very end of June; and daily maximum temperatures were unremittingly high—95° and over. A little rain and cool weather came from June 28 to July 3. But the remainder of the period was again excessively hot and dry.

General conditions—This is always the dullest (and the only dull) period of the year for bird students on the Texas coast. The really spectacular migrations are completed by mid-May; and only a few stragglers appear after June 1. Except for a few irregular occurrences, the bright spot of this period was the little flurry of shore birds that

appears annually in the second week of July. Most young birds were out of the nest before the very hot weather arrived, and several species (mockingbirds, cardinals, Carolina wrens, tufted titmice, red-wings) were able to raise several broods. The bob-white crop was excellent; and all the herons, egrets and gallinules did well. The Audubon Sanctuary on Vingt-et-un Island, in Galveston Bay, got off to a bad start; but by June 4 it was crowded with nests (containing both eggs and young) of white and white-faced glossy ibises, roseate spoonbills, black-crowned night and Louisiana herons and American and snowy egrets. Yet the main island of the sanctuary has been much reduced in size by the action of the weather; therefore the total number of birds it harbors is considerably smaller than in previous years.

Last spring dates—White pelican, Cove, May 16, but at mouth of San Jacinto River on June 4 (25 birds) and at Rockport throughout the period; Canada goose, one or two individuals at Cove, May 28 and June 11; redheads and canvas-backs, Rockport, May 21; pintail, Rockport, May 28; osprey, Rockport, June 23; sora, Cove, May 19; Franklin's gull, Cove, June 2; black tern, Rockport, June 4, Cove, May 26; eastern wood pewee, Cove, May 17; ash-throated flycatcher, Rockport, May 28; rough-winged swallow, Rockport, May 21; bank swallow, Cove, May 27, Rockport, May 21, Houston, May 23; cliff swallow, Cove, May 20; purple martin, Rockport, May 29; wood thrush, Houston, June 13; cedar waxwing, Cove, May 18; red-eyed vireo, Houston, May 21; magnolia warbler, Cove, May 17; hooded warbler, Houston, May 17; blackpoll warbler, Rockport, May 16; redstart, Houston, May 21; savannah sparrow, Cove, May 16.

First autumn dates—Marbled godwit, Rockport, June 29; greater yellow-leg, Cove, July 14; lesser yellow-leg, Houston, July 19; solitary sandpiper, Rockport, July 15; least sandpiper, Cove, July 14; Rockport, July 12; dowitcher, Rockport, July 10; herring gull, Galveston, July 14; ring-billed gull, Rockport, July 14; black tern, Cove, July 10; rough-winged swallow, Rockport, June 23; barn swallow, Cove, June 23.

Nesting—Green heron, young in nest at Kemah, June 3; yellow-crowned night heron, colony of half-grown young at Houston, May 21; birds as reported above on Vingt-et-un Island, June 4; immature white ibis on the wing at Cove, May 22; king rail, mother with young at Cove, June 29; gull-billed tern, eggs on Vingt-et-un Island (in two nests) June 4; Cabot's tern, breeding with royal, Caspian, and gull-billed terns on spoil-banks near Rockport in late May; cliff swallow nests near Rockport, June 23; purple martin nest with 3 fresh eggs at Houston, May 25; tufted titmouse carrying food to young in nest, Houston, June 8; bronzed grackle, carrying food to young in nest at Baytown (Cove region) June 5, and young just out of nest in

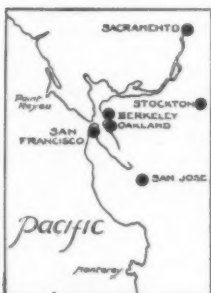


Houston, May 27; red-wing, nest with 3 fresh eggs at Houston, July 9; cowbird's egg in red-wing's nest on July 9, and in cardinal's nest on June 8, both at Houston; cardinal, nest with 2 fresh eggs at Houston, June 8 and nest with 3 half-fledged young at Cove, July 15; dickcissel, carrying nesting material at Cove, May 28.

Items of Special Interest—McKay reports a good-sized flock of Canada geese at Anahuac (near Cove) July 7; Mrs. Hagar reports the Mexican grebe remaining at Rockport throughout the period, a Texas sparrow there June 23 and the Texas night-hawk on July 9.—GEORGE G. WILLIAMS, *The Rice Institute, Houston, Texas.*

SAN FRANCISCO REGION

The summer has been an especially favorable one for birds and the vegetation upon which so many of them depend. Warm nights and cool days



made this June the coolest for more than twenty years. Cool weather was generally unfavorable for plant growth and maturity and it retarded development of most plants. Pastures and ranges dried late and remained in fair condition, thus prolonging the availability of plant and insect food necessary for continued nesting. Many birds began new nests long after the

normal termination of the nesting season. All these conditions were much like those of a year ago.

Water birds listed below are included for occurrence at out of the ordinary place or time, for early arrival on the fall migration, or for mention of nesting activity. Red-throated loon, Phoenix Lake, one on June 11 (Kelly); brown pelican, Bird Island, Point Lobos, 12 family groups including downy young on June 24 (Williams); American bittern, Lake Temescal, June 25 (Leffler); black brant, near Pacific Grove, 1 on July 11 (W.); Florida gallinule, Golden Gate Park, May 27 (K.); black-bellied plover, Alameda, 13 on July 1 and 12 on July 4 (K.); black turnstone, Point Lobos, 3 on June 27 (W.); Hudsonian curlew, Alameda, 1 on May 21 (K.); spotted sandpiper, Marble Fork above Lodge Pole Camp Ground, Sequoia National Park, one on July 14 (Harwell); willet, Alameda, 400 on July 4 (K.); dowitcher, Alameda, 200 on July 4 (K.); godwit, Alameda, 300 on July 4 (K.); avocet, on coast of northern Monterey County, 5 nests containing eggs on June 11 (W. and Reynolds family); Bonaparte's gull, Alameda, few on May 21 (K.); Caspian tern, Lake Merritt, June 24 (L.).

Nearly all the notable reports of land birds have been assembled in one paragraph. Mostly they pertain to nesting. White-tailed kite, northern Monterey County, rusty-breasted young out of nest on June 20 (Williams); pygmy owl, near Giant Forest Lodge, Sequoia National Park, 2 on July 1 (Harwell); pileated woodpecker, observed at 4 stations in Sequoia National Park (H.); western flycatcher, Carmel Highlands, 3 eggs, a second set after young fledged from same nest, being incubated on July 12 (Williams); chestnut-backed chickadee, Redwood Regional Park, June 29 (Kelly); red-breasted nuthatch, 11,000 Broadway Terrace, Oakland, pair with young on June 10 (Curtis); robin, Salinas Junior College lawn, one on June 5 (Linsdale); russet-backed thrush, Redwood Regional Park, numerous on June 29, Alameda, numerous, 12 in less than half a block of backyards on May 18 (K.); cedar waxwing, Golden Gate Park, May 27 (K.); Audubon's warbler, Ross Valley, Marin County, 2 on June 17 (K.); Broadway Terrace, Oakland, June 7 (C.); cowbird, Lake Temescal, June 21 and 25 (K.); Arizona hooded oriole, nests reported at Seminary Court, Oakland (Brock), Hayward (Rinehart) and Alameda (K.); Brewer's blackbird, Carmel, in a colony where first young hatched on April 23, the last young (a second brood) left the nest on June 28 (W.); house finch, Carmel, nest with four eggs being incubated on July 13 (W.); grasshopper sparrow, Joaquin Miller Road, Oakland, nest containing 4 eggs on June 16 still had young on June 29 (K.).

Forster's terns have been present in this region this summer and have been reported as nesting in at least one locality remarkable for its location on the coast. Mrs. Kelly thought this tern was possibly nesting this year on Bay Farm Island which was partly flooded. She saw, at Alameda, 50 terns on May 16, a few on May 21, and about 100 on July 1. On the coast of northern Monterey County, on June 11, Williams with Captain T. E. Reynolds and family counted 421 nests with eggs and they saw one downy young bird.

Another bird present into the summer in especially large numbers is the western tanager. In Alameda, 6 were seen at one time on May 18, many were seen at Orinda on May 24, but none was found there on June 7, a male was seen on June 11 in Ross Valley, Marin County, and 5 birds in this locality on June 17, made the observer think they were nesting. Alameda, one on July 14 (Kelly).—JEAN M. LINDSALE, *Hastings Reservation, Jamesburg Route, Monterey, Calif.*

SOUTHERN CALIFORNIA REGION

Most days in June and July were overcast until 10 A.M. or noon, rendering the temperature more mild and, we believe, extending the hours favorable



for the observation of birds; particularly, shade loving species such as thrushes, wrens, towhees and wren-tits. Lack of precipitation is characteristic of southern California during the summer. The "unusual" feature being the prevailing overcast condition.

Migration—May 17, San Gabriel River Bird Sanctuary, 30 to 50 greater yellow-legs were heard and seen flying northeast. This species was observed frequently before and after this date, several times in flocks of 4 to 8, but only two or three times afterwards. This date, therefore, seems to be that of the main migration from this area. Records of individuals after this date are not uncommon, however. May 17 was the peak of the yellow warbler wave, though a few were observed about April 27 with the great wave of other warblers. (Seen then were Townsend's, black-throated gray, hermit, Nashville, black-capped, MacGillivray's and orange-crowned). Other records are: May 19, San Gabriel River Bird Sanctuary, earliest date, Traill's flycatcher distinguished; May 21, Palos Verdes, 1 spotted sandpiper (Shuart) June 18, Playa Del Rey, ruddy turnstone (Groner, White); July 11, Death Valley, 150 to 250 mallards (Auger); July 23, Playa Del Rey, Caspian tern and greater yellow-leg (G. W.).

Population—More spotted sandpipers than usual were at Palos Verdes this year (S.). In the San Gabriel River Bird Sanctuary area crows have been increasing from year to year, in spite of some effort at reduction by the farmers. Two species in a precarious position in the latter area, and, we believe in most other places in this part of the state, are the white-tailed kite and the red-shouldered hawk. We estimate about three pairs of each of these species in the San Gabriel River Bird Sanctuary area. During May and June the black-chinned sparrows were common in the Pasadena foothills (Quattlebaum). Abundant this year in the San Gabriel River Bird Sanctuary are: yellow-breasted chat, cardinal, green heron, yellow-throat, song sparrow, brown and spotted towhees, olive-backed thrush, California thrasher, red-shafted flicker and downy and Nuttall's woodpeckers. Lazuli buntings were unusually numerous throughout southern California this season. Other records are: May 27, upper Newport Bay, 2 American ravens; July 11, Death Valley, road-runner (A). On Puente Creek a screech owl was heard almost

nightly in May and June and was seen a few times. Apparently it was not there in the winter.

Nesting—April 20 to early June in the San Gabriel River Bird Sanctuary area 10 to 15 pairs of rough-winged swallows nested in the banks. Early in June many young of this species were seen on wires with adults, taking short flights and receiving food. On the 17th young cliff swallows were among them. On the 21st no young rough-wings remained, only a few young cliff swallows. May 13, same area, a belted kingfisher carried fish to a hole in a bank (Stultz) and was noted a number of times after this date. On the 30th two fledglings were observed in the same neighborhood. Other nesting activities noted are: May 17, San Gabriel River Bird Sanctuary, black phoebe's nest with 4 eggs and 2 tree swallows' nests (Mrs. Lewis); May 22, same area, red-wing fledglings observed. May 27, upper Newport Bay, 2 young clapper rails with parent; May 29, Stough Canyon, black-chinned sparrows nesting (Kent); May 10 to June 17 at Buckhorn Flats were found several white-breasted nuthatches' nests, 2 pygmy nuthatches' and 4 or 5 robins' nests (Ecklers). June 11, Echo Mountain, black-tailed gnatcatcher nesting (Q); June 11, Whittier area, great horned owl with fledgling on the side of a cliff, and nests of phainopepla, Cassin's kingbird, mourning dove and Bullock's oriole (Daugherty, G., the C's); June 12, Whittier area, black-headed grosbeak with young in nest; June 13, pygmy owl's nest, 3 eggs, one pipped; on 17th a fresh set of eggs; on July 9, young hatched, observed till the 30th when young disappeared (Ecklers); also June 17, Audubon's warbler feeding young, nest of white-headed woodpecker, Wright's flycatcher (4 eggs), western tanager and Clarke's nutcracker feeding young; July 23, Playa Del Rey, 3 immature clapper rails and young meadowlark (G., W.).

Behavior—May 19 to 21, an albino hummingbird, a female Anna, stayed around our home on Puente Creek, feeding on flowers in the yard and the tree tobacco along the creek to a distance of a quarter of a mile. It was pure white, except for the yellow bill and feet. With it, apparently expressing a desire to be fed, was an immature bird of normal plumage. We believed it to be this season's offspring (L., Duff, C's.).

Mr. Auger states the mallards seen in Death Valley in July tried to land on the ground, the mirage in this hot desert area giving the illusion of water. The birds evidently learned by experience, as their next attempt was less energetic and final. They departed over the Panamints breaking up into three groups.—J. H. COMBY, Box 378F, R. 3, Whittier, California.

Audubon Magazine's Eighth Breeding-Bird Census

Edited by

MARGARET B. HICKEY

INTRODUCTORY remarks have been omitted this year so that more actual censuses could be printed. Of special interest are the foraging ranges in census numbers 16 and 27, and the nesting success for robins given in census number 19.

Symbols and abbreviations: P=pair; M=male, generally singing on a fixed territory throughout the season; UM=unmated male; N=pair with nest;

Y=pair seen feeding young; X=birds present. Separated by commas, these figures represent a classified basis for the number of pairs of each species: crow, 2P, 4N, 4Y=10 pairs of crows. In the tables where the densities are summarized, A birds on the study tract, nesting there but feeding elsewhere.

PART I—BOGS AND SWAMPS

Habitat	State	Acres	Hrs. Obs.	Year	Adults per 100 Acres	+A	Contributor
1. Bur-reed marsh	Ohio	17.5	50	1944	823	—	P. A. Stewart A. T. Hartley
2. Alder swamp and pond....	Vt.	20	10	1942	450	70	W. P. Smith
			10	1943	470	90	" " "
			10	1944	520	100	" " "
3. Tamarack bog and border..	Vt.	2.8	25	1938	714	500	W. P. Smith
			20	1939	964	572	" " "
			20	1940	857	642	" " "
			20	1941	1072	786	" " "
			15	1942	1214	642	" " "
			15	1943	1214	714	" " "
			15	1944	857	1214	" " "
4. Balsam-black ash bog and border	Vt.	8.3	40	1938	528	96	W. P. Smith
			25	1939	612	120	" " "
			25	1940	590	168	" " "
			20	1941	600	168	" " "
			20	1942	648	192	" " "
			20	1943	707	144	" " "
			20	1944	795	169	" " "

1. BUR-REED MARSH. A tract of marsh with bur-reed (*Sparganium eurycarpum*) growing on 88% of its area. Open water with scattered clumps of bur-reed and a small patch of pond lily (*Nymphaea advena*) occupies about 10%, while 4 small patches of cat-tail (*Typha latifolia*) make up the remaining 2%. There are several clumps of red-osier dogwood (*Cornus stolonifera*), and 18 old muskrat houses are scattered over the wetter portion of the area. Along parts of the eastern and western boundaries (400 feet) and along all of north side (600 feet) is a similar marsh. Size: approximately 17.5 acres. Location: in Fairfield Township, Columbiana County, Ohio, about 3 miles $\text{N} \times \text{W}$ from Columbiana, and accessible from the Columbiana-New Springfield Road about $\frac{1}{4}$ mile east from Ohio State Route No. 7. Topography: a narrow strip of marsh with the channel of Bull Run passing lengthwise through the tract. Water and soft mud knee-deep in most of

the reed-grown area through June, and about hip-deep in the pond area. A narrow reed-grown margin contained no standing water. Edge: grazed mature woodland (1450 feet) on east; waste grassland merging into a dense stand of red-osier dogwood on most of west side; a small plot of second-growth woodland at the south end. The edge furnished nesting sites for 5 pairs of birds, which did most of their feeding in the area: green heron, 3P; wood duck, 2Y. Surveys: infrequent visits during past 10 years. Coverage: May 7, 23, 28; June 4, 10, 11, 13, 18, 25. Total, 50 hours. Additional visits were made during April and July, while the night of June 10 was spent at the area. Raymond O. Marshall aided in the survey on 2 trips. Weather: winter precipitation below normal until March when the average was surpassed; rainfall continued above normal through May and was followed by dry weather until mid-July. Temperature about normal through the winter; spring

PART II — FIELDS AND CUT-OVER AREAS

Habitat	State	Acres	Hrs. Obs.	Year	Adults per 100 Acres	Contributor
5. Swampy prairie	Ill.	67	33	1941	970	W. Robertson, Jr.
		64	24	1942	430	" " "
			17	1944	278	" " "
6. Bottomland meadow with scattered trees	N. Y.	15	90	1944	560	G. Komorowski
7. Brushy field, woodlots and pond	Mich.	100	175	1938	242	L. H. Walkinshaw
			312	1939	292	" " "
			256	1940	264	" " "
			66	1941	190	" " "
			78	1942	316	" " "
			272	1943	296	" " "
			55	1944	293	" " "
8. Recently cut-over eastern hardwood slope	Ohio	15	23	1943	773	P. A. Stewart
			20	1944	847	" " "
9. Partially cut-over northern hardwood slope	N. H.	23	23	1943	317	Vera H. Wallace
			30	1944	434	" " "

and summer above average. Census: bittern, 1P; least bittern, 4P (3N, 1P); mallard, 3P (1N, 2Y); marsh hawk, 1N; Virginia rail, 8P (7N, 1P); song, 1N; Florida gallinule, 2N; prairie marsh wren, 28N; red-wing, 16N; swamp sparrow, 8P (4N, 3Y, 1P). Total: 10 species, 72 pairs. Density: 411 pairs per 100 acres. Frequent visitors: green heron, 3P; blue-winged teal, 1P; wood duck, 2Y; coot, 1P; killdeer, 1P; spotted sandpiper, 1P; belted kingfisher, 1P. Chimney swift, barn and cliff swallows, and purple martin feed regularly over the area. Comment: The marsh hawk did all of its feeding outside the area, and the red-wings did likewise to a considerable extent. The green heron, wood duck, spotted sandpiper, and kingfisher did most of their feeding in the area but nested elsewhere. Young red-wings in flight were disregarded since they could not be assigned to any particular nest, and doubtless additional birds of this species came into the area from the outside.—ALBERT T. HARTLEY, Columbiana, Ohio, and PAUL A. STEWART, Leetonia, Ohio.

2. **ALDER SWAMP AND POND.** An ungrazed tract of 20 acres containing a shallow pond of 3 acres, dry in late summer, with surrounding alder thickets (75%) and a drier area containing aspen and white pine; located in Newbury, Vermont; fully described and censused for the first time in 1942. Bounded by open field, open pasture, and a railroad right of way. Coverage: April 30; May 7, 14; July 2, 17. Total hours, 10. Census, pairs nesting and feeding largely within the area (* indicates permanent resident): black duck, 1P, 1Y; wood duck, 1P; Am. woodcock, 2P; black-billed cuckoo, 1P; alder flycatcher, 3P; *black-capped chickadee, 2Y; *white-breasted nuthatch, 1P; catbird, 1P; veery, 3P; cedar waxwing, 1P; red-eyed vireo, 1P; black and white warbler, 1Y; chestnut-sided warbler, 2P; oven-bird, 1P; n. yellow-throat, 4P, 1Y; redstart, 2P; e. red-wing, 5P, 2Y; rose-breasted grosbeak, 1Y; indigo bunting, 1Y; swamp sparrow, 7Y; e. song sparrow, 2P, 4Y. Total: 21 species, 52 pairs. Density: 260 pairs per 100 acres (225 in 1942; 235 in 1943). Pairs nesting on area, but securing most food elsewhere: *n. downy woodpecker, 1Y; e. kingbird, 1Y; e. crow, 1Y; e. robin, 2Y; Baltimore oriole, 1P; browned grackle, 1P; e. goldfinch, 3P. Total: 7 species, 10 pairs. Density: 50 pairs per 100 acres (35 in 1942; 45 in 1943). Grand total: 28 species, 62 pairs. Final density: 310 pairs per 100 acres (260 in 1942; 280 in 1943). Frequent visitors: Am. bittern, 1 adult; yellow-throated vireo, 1P; e. red-wing, 1P. Comment: The

addition of the woodcock is notable because the area is known to hunters as having very poor "cover," even during migration.—WENDELL P. SMITH, Wells River, Vt.

3. **TAMARACK BOG AND BORDER.** A small (.93-acre) bog at Wells River, Vermont, and 1.87 acres of bordering woodland; fully described in previous reports and censused since 1938. Coverage: June 12, 29; July 5, 12, 18; and frequent observations throughout the season. Total hours, 15. Census, pairs nesting and feeding within the study area: hermit thrush, 1Y; Nashville warbler, 1Y; myrtle warbler, 1Y; black-throated green warbler, 1P; blackburnian warbler, 3Y; oven-bird, 1P; redstart, 1Y; slate-colored junco, 2Y; white-throated sparrow, 1Y. Total: 9 species, 12 pairs. Density: 429 pairs per 100 acres (357 in 1938; 482 in 1939; 429 in 1940; 536 in 1941; 607 in 1942; 607 in 1943). Pairs, nesting on area, but feeding elsewhere (* indicates permanent resident): n. flicker, 1Y; *e. hairy woodpecker, 1Y; *n. downy woodpecker, 1P; e. wood pewee, 1P; e. crow, 1Y; *black-capped chickadee, 2Y; *red-breasted nuthatch, 1N; e. robin, 2Y; blue-headed vireo, 1P; e. purple finch, 1P; e. goldfinch, 2P; e. chipping sparrow, 3Y. Total: 12 species, 17 pairs. Density: 607 pairs per 100 acres (250 in 1938; 286 in 1939; 321 in 1940; 393 in 1941; 321 in 1942; 357 in 1943). Grand total: 21 species, 29 pairs. Final density: 1036 pairs per 100 acres (607 in 1938; 765 in 1939; 750 in 1940; 929 in 1941 and 1942; 964 in 1943).—WENDELL P. SMITH, Wells River, Vt.

4. **BALSAM-BLACK ASH BOG AND BORDER.** A small 2.84-acre bog and border of 5.5 acres located in Ryegate, Vermont; fully described in 1938 and 1939, and censused since 1938. No change in area during the past year, and season normal in regard to amount of water in bog. Coverage: May 30; June 5, 12, 18; July 3, 10, 21; and frequent observations throughout the season. Total, 20 hours. Census, pairs nesting and feeding for the most part within the study area (* indicates permanent resident): n. flicker, 1Y; *e. hairy woodpecker, 1Y; n. crested flycatcher, 1Y; e. wood pewee, 1P; *black-capped chickadee, 1N, 1Y; *red-breasted nuthatch, 1P; *browns creeper, 1Y; wood thrush, 1P; e. hermit thrush, 2P; veery, 1P; *e. golden-crowned kinglet, 1Y; blue-headed vireo, 2P; Nashville warbler, 1P; n. parula warbler, 1P; magnolia warbler, 1P, 1Y; myrtle warbler, 1Y; black-throated green warbler, 2Y; blackburnian warbler, 3Y; oven-bird, 3P; Canada warbler, 2Y; scarlet tanager, 1P; white-throated spar-

row, 2Y. Total: 22 species, 33 pairs. Density: 396 pairs per 100 acres (264 in 1938; 306 in 1939; 295 in 1940; 300 in 1941; 324 in 1942; 354 in 1943). Pairs nesting within the study area, but securing much food elsewhere: *n. blue jay, 1Y; e. crow, 1Y; e. robin, 1Y; e. purple finch, 1P; e. goldfinch, 1P; slate-colored junco, 2Y. Total: 6 species, 7 pairs. Density: 84 pairs per 100 acres (48 in 1938; 60 in 1939; 84 in 1940 and 1941; 96 in 1942; 72 in 1943). Grand total: 28 species, 40 pairs. Final density: 480 pairs per 100 acres (312 in 1938; 366 in 1939; 378 in 1940; 384 in 1941; 420 in 1942; 426 in 1943). Frequent visitors: red-shouldered hawk, 1P; e. whip-poor-will, 1P; black-capped chickadee, 1Y; e. hermit thrush, 1P; black-throated green warbler, 1P; scarlet tanager, 1P. Total: 6 species, 6 pairs.—WENDELL P. SMITH, Wells River, Vt.

5. SWAMPY PRAIRIE. A 64-acre tract of swampy prairie, located 1½ miles northwest of Berlin, Island Grove Township, Sangamon County Illinois; censused and described in 1941 and 1942. The tract has been heavily pastured since the winter of 1942, resulting in almost complete destruction of the original bluegrass cover and reduction of large weed patches of Canada thistle and marijuana. These plants have been replaced entirely by ragweed. Thinning of cover and destruction of some food plants has resulted in marked changes in the density of bird life, several species having left the area entirely. Water: Stream courses and seasonal ponds remain as first described. Spring flooding of the tract occurred later (early May) this year, resulting in retarded plant growth and thinner cover. Coverage: May 16, 24; June 11, 19, 29. Total, about 17 hours. Census, pairs nesting and feeding largely within the study area: sparrow hawk, 1Y; bob-white, 2P; mourning dove, 2P; yellow-billed cuckoo, 2P; downy woodpecker, 1N; house wren, 1P; n. yellow-throat, 11P; e. meadowlark, 1P; indigo bunting, 2P; dickcissel, 16P (4P in 1941, 11P in 1942); song sparrow, 2P. Total: 11 species, 46 pairs. Density: 72 pairs per 100 acres. Pairs nesting within study area, but feeding largely outside it: flicker, 1P; red-headed woodpecker, 3N; e. phoebe, 1N; catbird, 1P; starling, 11Y; e. meadowlark, 1P; e. red-wing, 18N; bronzed grackle, 6P; dickcissel, 1P. Total: 9 species, 43 pairs. Density: 67 pairs per 100 acres. Grand total: 18 species, 89 pairs. Final density: 139 pairs per 100 acres (243 in 1941; 216 in 1942). Regular visitors: green heron, 2; killdeer, 1; crow, 6; barn swallow, 2. Total: 4 species, 11 individuals. Comment: The great decrease in breeding birds (from 138 pairs in 1942 to 89 pairs in 1944) seems to have resulted entirely from overgrazing by cattle and hogs, as no other changes in the area were evident. Pasturing was very heavy during the 1943 breeding season, but considerably lighter this year. About 20 horses were grazing on the study area at the time of this year's census. Much of the decrease was probably due to actual interference with nesting by the grazing animals, and even more may be attributed to the destruction of cover and food plants. The absence of the goldfinch, for example, may have resulted from the complete destruction of the large patches of Canada thistle. The marked increase in the dickcissel population is interesting, since it was first noted in 1942, when ragweed began to replace the original bluegrass cover. Also notable is the increase of the starling, which gradually continues to crowd out native hole-nesting species.—WILLIAM ROBERTSON, JR., Berlin, Ill.

6. BOTTOMLAND MEADOW WITH SCATTERED TREES. General vegetative cover consists of wild carrot, ragweed, goldenrod, native iris, brambles, skunk cabbage, tiger lily, and various grasses. A few elms, about 20 poplars, and a few young and old willows are also present. This heavily disturbed plant community was largely composed of willows and brambles some 20 years ago, but these were cut out; the climax of the plant succession that has just set in is included in census no. 20, where one may see the wildlife that will presumably succeed in eventually occupying this meadow. Site: about 15 acres. Location: New York Botanical Gardens (Bronx Park), Bronx, New York. Topography: flat. Edge: The few trees provide simultaneous access to 2 environments; the Bronx River lies along the west, the ridge forest of census no. 20 on the south and east, and the Bronx Parkway on the north. Across the narrow river are an open stand of old willows and the mature bottomland forest mentioned above.

Surveys: frequent trips for the last 9 years. Coverage: daily throughout May: June 3, 5, 11, 14, 17, 22-24, 26, 28, 30; July 3-6, 14, 20, 21, 24, 25. Hours varied from 6 A.M. to 8.30 P.M., and totaled 90. Census: mallard, 1P; ring-necked pheasant, 1Y; black-billed cuckoo, 1P; flicker, 1P; blue jay, 1P; catbird, 2P; brown thrasher, 1P, 1N; robin, 3P; starling, 2P, 1N; warbling vireo, 1P, 1N; yellow warbler, 1P, 1Y; n. yellow-throat, 1P, 1N; English sparrow, 1P, 1Y; red-wing, 3P, 3N, 1Y; Baltimore oriole, 2P, 1N; cowbird, 1P; rose-breasted grosbeak, 1P; goldfinch, 1P; swamp sparrow, 1P; song sparrow, 4P, 1Y. Total: 20 species, 42 pairs. Density: about 280 pairs per 100 acres.—GEORGE KOMOROWSKI, Linnaean Society of New York, New York, N. Y.

7. BRUSHY FIELD, WOODLOTS, AND POND. The same 100-acre farm described in detail in 1940, containing 83 acres of fields, 12 acres of woodland, and 5 acres of pond; located in Pennfield Township, Calhoun County, Michigan, and censused since 1938. Coverage: March, 2 hours; April, 17 hours; May, 84 hours; June, 84 hours; July (to the 27th), 55 hours. Total, 242 hours. Weather: April, May, and June about normal; July very dry. The pond, which had water nearly as high as during 1943, in the spring of 1944 had receded considerably by late July due to the July drought. Census: red-shouldered hawk, 1N; e. bob-white, 1P, 2Y; mourning dove, 2P; yellow-billed cuckoo, 1P, 1N; ruby-throated hummingbird, 1P; flicker, 1N; red-headed woodpecker, 3N; hairy woodpecker, 1P; downy woodpecker, 1N; e. kingbird, 2P, 1N, 1Y; n. crested flycatcher, 1P; alder flycatcher, 1P; e. wood pewee, 2P, 3N; prairie horned lark, 1P; crow, 2N; black-capped chickadee, 1Y; tufted titmouse, 1Y; white-breasted nuthatch, 1P; Ohio house wren, 1N; catbird, 1P, 2N; brown thrasher, 1N, 1P; e. robin, 2Y; e. bluebird, 4N; cedar waxwing, 1P; starling, 2N; red-eyed vireo, 1UM; warbling vireo, 1P; e. yellow warbler, 1P, 1N; n. yellow-throat, 2P; English sparrow, 4P; e. meadowlark, 1P, 3Y; red-wing, 3N, 1Y; orchard oriole, 1Y; Baltimore oriole, 1Y; e. cowbird, 5P; e. cardinal, 3N; indigo bunting, 1P; e. goldfinch, 5P, 1N; red-eyed towhee, 1P, 3N; e. grasshopper sparrow, 1P; vesper sparrow, 2P, 4N; e. chipping sparrow, 1P; e. field sparrow, 49P (104 nests, 3Y, several males unmated at times); Miss. song sparrow, 3P, 1N. Total: 44 species, 146 pairs plus 1 unmated male. Density: 146 pairs plus 1 unmated male per 100 acres (121 in 1938; 146 in 1939; 132 in 1940; 95 in 1941; 158 in 1942; 147 in 1943). Frequent visitors: great blue heron, several feeding; green heron, 4 feeding; red-tailed hawk, in July; marsh hawk, over occasionally; killdeer, 1P; upland plover, 1 (over in July); black tern, nighthawk, chimney swift, purple martins, tree, rough-winged, and barn swallows, feeding over area in varying numbers; blue jay, 8 (always present somewhere on area); English sparrow, often in large flocks; bronzed grackle, feeding; blue-winged warbler, male present in late June for several days.—LAWRENCE H. WALKINSHAW, 1703 Central Tower, Battle Creek, Mich.

8. RECENTLY CUT-OVER EASTERN HARD-WOOD SLOPE. A 15-acre portion of the valley of the Middle Fork of Little Beaver Creek, cut-over in 1940; located near Teegarden, Salem Township, Columbiana County, Ohio; first described and censused in 1943, except that ¼ acre of similar habitat was added along the western boundary to make the area come within the 15-acre minimum. A telephone line has been run along the highway through the tract. Otherwise the area is unchanged except for natural growth of the trees. Coverage: May 5, 7, 14; June 4, 11, 18, 22, 25; July 2, 9. Total, 20 hours. In addition, several preliminary visits were made and 2 night visits for nocturnal species. Albert T. Hartley and Raymond O. Marshall aided in the survey on 1 trip each. Weather: Near-normal temperature prevailed throughout the winter with the late spring and summer months above normal. Precipitation was subnormal during the winter until March when the average was exceeded by nearly one inch. Rainfall during April and May was slightly above average, while drought conditions prevailed during late June until mid-July. Census: ruffed grouse, 1P; mourning dove, 1P; yellow-billed cuckoo, 1P; ruby-throated hummingbird, 1P; red-bellied woodpecker, 1N; hairy woodpecker, 1N; crested flycatcher, 1P; wood pewee, 1P; black-capped chickadee, 1P; tufted titmouse, 2P; Carolina wren, 2P; catbird, 1P; robin, 1P; wood thrush, 1P; blue-gray

PART III — OAK WOODLANDS

Habitat	State	Acres	Hrs. Obs.	Year	Adults per 100 Acres	Contributor
10. Scrub oak area.....	Mich.	36	126	1944	483	Walkinshaw, Baker; Brigham, Brigham, Dyer
11. Live oaks along canyon creek	Calif.	17	+	1944	1271	Mr. and Mrs. A. E. Hutchinson
12. Second-growth ridge forest	Ohio	100	75	1937	536	L. E. Hicks, F. B. Chapman
			56	1938	532	" " " "
			41	1939	530	" " " "
			45	1940	616	" " " "
			82	1941	644	Hicks, Chapman, D. L. Leedy
			87	1944	668	Hicks, C. A. Dambach, G. H. Breiding
13. Upland oak-hickory forest	Ohio	35	71	1937	200	A. H. Clausus
			55	1938	234	" " " "
			93	1939	223	" " " "
			+	1940	194	" " " "
			225	1941	243	" " " "
			175	1942	298	" " " "
			30	1944	269	" " " "
14. Upland oak-hickory forest with pond	Ill.	56	65	1941	618	Wm. Robertson, Jr.
			25	1942	715	" " " "
			29	1944	479	" " " "
15. Oak-maple forest	Ill.	56	+	1941	382	J. M. Spiers, E. J. Koestner, H. H. Shoemaker, S. C. Kendeligh
			38	1942	446	T. W. Roberts, H. C. Seibert.
			57	1943	536	S. C. Kendeligh V. Johnston, H. C. Seibert,
			25	1944	471	S. C. Kendeligh H. H. Shoemaker, S. C. Kendeligh
16. Upland oak-poplar forest	Va.	20	64	1942	680	M. Marshall, Jr.
			59	1943	500	" " " "
			65	1944	540	" " " "
17. Upland hemlock-oak forest	Pa.	61	264	1942	257	J. C. Tracy, C. C. Ross, A. W. Stokes, E. B. Wright
18. Oak-hickory-pine forest...	W. Va.	24	+	1942	508	S. K. Dandridge
			+	1943	500	" " " "
			+	1944	550	" " " "
19. Cemetery with edge effect.	Wis.	88	144	1944	380	Mrs. Arthur Koehler, George Koehler

matcatcher, 1P; cedar waxwing, 1N; yellow-throated vireo, 1P; red-eyed vireo, 2P (1N, 1P); blue-winged warbler, 2P; cerulean warbler, 2P (1N, 1P); oven-bird, 1UM; Kentucky warbler, 2P; n. yellow-throat, 1P; yellow-breasted chat, 7P; redbird, 1P; cowbird, 2P; scarlet tanager, 2P; cardinal, 7P; indigo bunting, 6P; goldfinch, 1P; red-eyed towhee, 5P; chipping sparrow, 1N; field sparrow, 1P; song sparrow, 2P (1N, 1P). Total: 14 species, 63.5 pairs. Density: 423 pairs per 100 acres. Visitors: A pair of flickers and a pair of downy woodpeckers regularly visited the area for food. The Acadian flycatcher nested on the opposite side of the creek but fed largely within the area. A pair of white-breasted nuthatches and an additional pair of yellow-throated vireos nested outside but did much of their feeding in the area. A male rose-breasted grosbeak, seen on June 6, seemingly held no territory nearby, either in or out-

side the area. Comment: A small but dense grove of black locust, now almost 20 feet in height, attracted the wood thrush and oven-bird. The latter, however, disappeared after singing for 2 weeks. The striking decline in the field sparrow population must be due largely to the effect of growth of the cover.—PAUL A. STEWART, Lectionia, Ohio.

9. PARTIALLY CUT-OVER NORTHERN HARDWOOD SLOPE. An area of 23 acres, located just south of New Hampton, New Hampshire; described and first censused in 1943. There was very little cutting in the area since last fall—one man chopped just to the south during the winter and to the southeast in the breeding season. No sawing this year inside tract. Dead standing trees have increased to 170 (60 last year), while there are 400 whole trees or whole untrimmed tops

lying on the ground. However, some of these are being removed for short, hardwood logs. Brush piles number 215, with many branches left where they fell, which makes the area nearly impenetrable except for the wood roads. Many saplings of red oak, beech, sugar maple, white birch, mountain maple, and hobblebush have grown to heights varying from 5 to 10 feet. No conifers have been seen as yet. Coverage: May 2, 7, 9, 19, 31; June 5, 18, 27; July 1, 9, 14, 22. Hours varied from 5.30 A.M. to 12 M., and totaled 30. Weather: see census no. 22. Census, pairs nesting and feeding within the study area: wood pewee, 2P; black-capped chickadee, 1N; winter wren, 1Y; robin, 1Y (2N); hermit thrush, 1P, 1Y; veery, 1P, 1Y; blue-headed vireo, 1P; red-eyed vireo, 1P; black and white warbler, 1Y; black-throated blue warbler, 2P; black-throated green warbler, 1P; oven-bird, 1P; n. yellow-throat, 1P; Canada warbler, 2P, 1Y; redstart, 1P; white-throated sparrow, 1Y. Total: 16 species, 22 pairs. Density: 96 pairs per 100 acres. Pairs nesting within study area, but feeding outside it: ruffed grouse, 1N (13 eggs); yellow-bellied sapsucker, 1Y; hairy woodpecker, 1N; wood pewee, 2P; black-capped chickadee, 1P; winter wren, 1Y; veery, 1P, 1Y; red-eyed vireo, 3P; black and white warbler, 1Y; Nashville warbler, 1P; black-throated blue warbler, 1P, 2Y; chestnut-sided warbler, 4P; oven-bird, 3P; redstart, 1P, 1Y; purple finch, 1Y; white-throated sparrow, 1Y. Total: 6 additional species, 28 pairs. Density: 121 pairs per 100 acres. Grand total: 22 species, 50 pairs. Final density: 217 pairs per 100 acres (159 in 1943). Frequent visitors: black-billed cuckoo; chimney swifts; flicker, 1Y; pileated woodpecker (probably a young bird); yellow-bellied sapsucker, 1Y; downy woodpecker; crested flycatcher; tree swallow; barn swallow; blue jay; crow; red-breasted nuthatch; brown creeper; cedar waxwing; blackburnian warbler; chestnut-sided warbler; oven-bird; n. yellow-throat; Baltimore oriole, 1Y; scarlet tanager, 1P, 1Y; rose-breasted grosbeak, 1P; goldfinch; slate-colored junco, 1Y; chipping sparrow, 1Y. Comment: Had I based the census on singing males seeming to defend nesting territories on May 31, I would have had 66 pairs, or on July 9 61 pairs. However, on other trips pairs varied from 30 to 50, showing that much more study was needed for a satisfactory report. Perhaps May 31 was too early here for active nesting of all species, for on that day a sharp-shinned hawk, a red-tailed hawk, and an olive-sided flycatcher were ranging the area. However, the ruffed grouse nest was discovered on that day, and a pewee was driving a scarlet tanager out of his tree. On May 7, the chickadee's nest was excavated and that of the hairy woodpecker discovered. A few days later a downy woodpecker's nest was found just off the territory. The July 9 trip was taken from 6 to 8.30 A.M., while most of the rest were from 8 to 11 A.M. The ruffed grouse were out of their nest June 18, but not on June 5. The hairy woodpeckers, winter wrens, Baltimore orioles, and 1 pair of black-throated blue warblers had young out of their nests on June 27. Sapsuckers, redstarts, and the other winter wrens had their young out on July 9. It is quite probable that the other pair of sapsuckers, scarlet tanagers, and juncos either nested on the tract or on the very edge. There was no evidence of the pileated woodpeckers feeding in the tract until the young would have left the nest, although they fed there frequently during the winter.—VERA H. (MRS. CLINTON) WALLACE, New Hampton, New Hampshire.

10. SCRUB OAK AREA. Typical clay-colored sparrow habitat of central Michigan. Covered with scrub oak, small hawthorn, choke cherry, beaked hazel-nut, maple, shad bush, and sweet fern, as well as many patches of blueberries. The tract was lumbered many years ago, many of the surviving stumps evidently being white pine. The area was swept by fire about 1934, and the oaks have grown from the roots, as have many other trees typical of burned-over areas. Size: 36 acres, the tract being $\frac{1}{2}$ mile long and 200 yards wide. Location: directly west of Lovells, Crawford County, Michigan, on each side of the highway to Grayling, R2W, T28N, S24. Edge: exactly the same type of country for miles to the north, south, and west. The town of Lovells lies directly to the east with a few pastured fields and houses present. A large gravel pit extends to the border on the south of the road, and another partially on the area on the north side. Coverage: May 29; June 4, 17, 18, 19, 20, 24; July 20, 21, 22, 23. Six hours in May, 87 in June, 33 in July; total,

126. Census: black-billed cuckoo, 3P; nighthawk, 1N; belted kingfisher, 1N; flicker, 1P; e. kingbird, 3N; bank swallow, 3P; rough-winged swallow, 1N, 1P; house wren, 1P; bluebird, 1P; brown thrasher, 2P; cedar waxwing, 4P; starling, 1N; red-eyed vireo, 1P; prairie warbler, 1N, 4P; oven-bird, 1P; n. yellow-throat, 1Y, 3P; e. meadowlark, 1P; cowbird, 3P; indigo bunting, 1N, 3P; goldfinch, 4P; towhee, 1N, 4P; vesper sparrow, 2P; clay-colored sparrow, 13N, 3Y, 9P; field sparrow, 3N, 3P; song sparrow, 1P. Total: 25 species, 87 pairs. Density: 242 pairs per 100 acres. Frequent visitors: marsh hawk, prairie chicken, upland plover (young found on similar area), whip-poor-will, prairie horned lark, blue jay, crow, chipping sparrow (near yard just east of tract). Loon and barn swallow flying over.—LAWRENCE H. WALKINSHAW, BERNARD W. BAKER, EDWARD M. BRIGHAM, JR., EDWARD M. BRIGHAM, 3RD, and WILLIAM DYER, Battle Creek, Grand Rapids, and Union City, Mich.

11. MATURE STAND OF LIVE OAKS ALONG CANYON CREEK. About 90% of the trees are live oaks (*Quercus agrifolia*) that reach an average height of 40 feet, the balance consisting principally of western plane trees (*Platanus racemosa*), black poplars (*Populus trichocarpa*), and arroyo willows (*Salix lasiolepis*). The last 3 species occur mainly near the creek. Some places have heavy undergrowth of shrubs and briars. There is occasional grazing by horses and goats in the area outside of Rocky Nook Park; 2 trails lead through this area. The park itself, containing trails, fire places, and picnic tables, is little used by people. A cleared area in the northeast corner is an abandoned athletic field grown to grass and weeds, with low shrubs between it and the live oaks. Size: about 17 acres. Location: Mission Canyon in Santa Barbara, Calif. Includes most of Rocky Nook Park and a wooded section adjoining to the north. Similar vegetation surrounds the area, except on the northern boundary where there is a cleared region. Topography: The ground slopes gently to the south, and there are high, steep banks along most of the eastern side of the creek. Elevation, about 300 feet. Coverage: frequent trips from Feb. 1 to June 15, at all hours of the day, but mostly in the morning. Weather: dry period between early March and April 26, on which date there was a heavy rainfall ($1\frac{1}{2}$ inches); otherwise normal. Census: downy woodpecker, 1Y; black-chinned hummingbird, 9N; Anna's hummingbird, 10N; Allen's hummingbird, 7N; black phoebe, 1P, 1Y; western flycatcher, 1N, 1Y; w. wood pewee, 1M, 1Y; Calif. jay, 1P; plain titmouse, 1Y; coast bush-tit, 10N; pallid wren-tit, 1N, 1Y, 1P; w. house wren, 3N, 2Y; Bewick's wren, 2N; canyon wren, 2Y; russet-backed thrush, 1P; Hutton's vireo, 5N, 3Y; w. warbling vireo, 1N, 1P; orange-crowned warbler, 1N, 5Y; yellow warbler, 1N, 2P; long-tailed chat, 1M; pileolated warbler, 4N, 1Y; cowbird, 2P; black-headed grosbeak, 1Y; Calif. purple finch, 3N, 1P, 1Y; house finch, 1Y; green-backed goldfinch, 2N; Lawrence's goldfinch, 1N; spotted towhee, 1N, 2P, 1Y; brown towhee, 1Y; Oregon junco, 1P, 1Y; song sparrow, 3N, 2Y, 1P. Total: 31 species, 108 pairs. Density: 635 pairs per 100 acres. Comment: Of the 56 nests found in trees, 45 (or 80%) were in live oaks.—MAGDELEINE C. and ARTHUR E. HUTCHINSON, 715 Mission Canyon Road, Santa Barbara, Calif.

12. SECOND-GROWTH RIDGE FOREST WITH OLD CLEARINGS. A dry 100-acre woodland with trees now 5-26 inches in diameter, located in the Shawnee State Forest, Scioto County, Ohio; described in detail in 1937 and censused annually for the next 5 years. The border between the forest and the long, cleared strips, which totaled 4.7 miles in 1935, has now almost disappeared with the merging of the tree and shrub zones. Surveys: several preliminary trips and several night trips for nocturnal species. Regular censuses on April 30, May 28 (6 A.M.-2 P.M.); June 5 (4-11 A.M.); June 6 (5-11 A.M.); June 7 (5 A.M.-12 M.); July 19 (6-11 A.M.). Field work exceeded 87 man-hours. Weather: averaged warmer; clearer and with less precipitation than normally. All days selected for census work were clear or with light clouds. Census: broad-winged hawk, 1P; e. mourning dove, 3N; yellow-billed cuckoo, 1M; black-billed cuckoo, 1M, 1P; e. whip-poor-will, 3M, 1N; ruby-throated hummingbird, 3M, 1P, 1N; e. hairy woodpecker, 1Y; n. downy woodpecker, 3P; n.

crested flycatcher, 1P; Acadian flycatcher, 1P; e. wood pewee, 3P; n. blue jay, 1N; e. crow, 1P; Carolina chickadee, 1P, 4Y; tufted titmouse, 4P, 2Y; n. white-breasted nuthatch, 1P; Carolina wren, 1N; e. robin, 1N; wood thrush, 3M, 4P; blue-gray gnatcatcher, 4P, 1Y; yellow-throated vireo, 5P, 1M, 1N; red-eyed vireo, 6P, 2M, 3N, 1Y; black and white warbler, 17P, 2M, 1Y; worm-eating warbler, 24P, 2M; blue-winged warbler, 1P; black-throated green warbler, 4M; cerulean warbler, 18P, 2M, 1Y; pine warbler, 3P, 1M, 2N; n. prairie warbler, 1P; oven-bird, 24P, 1M, 3N; Kentucky warbler, 1P; yellow-breasted chat, 12P, 1Y, 4N; hooded warbler, 1M, 19P, 1Y; Am. redstart, 13P, 1M, 1N; e. cowbird, 6P, 2N; scarlet tanager, 7P, 1Y; summer tanager, 6P; e. cardinal, 11P, 1N; indigo bunting, 10P, 1M, 4Y, 1N; e. goldfinch, 5P; red-eyed towhee, 10P, 1M, 1N; e. chipping sparrow, 2P, 3Y, 6N. Total: 42 species, 134 pairs (35 nests located and young observed from 25 others). Density: 334 pairs per 100 acres (268 in 1937; 266 in 1938; 265 in 1939; 308 in 1940; 322 in 1941). Comment: The Carolina wren nested for the first time since 1936. Comparing 1944 with 1941 (the last year of census), 16 species increased, 19 decreased, and 3 were present in the same number both years. Only the mourning dove and prairie warbler (9 to 1) had marked decreases, while marked increases were noted in 13 species: yellow-throated vireo, worm-eating warbler (10 to 26), cerulean warbler (11 to 21), pine warbler, redstart, and cowbird. Permanent residents normally make up one-fifth of the breeding individuals on this study area, but in 1944 they made up only 15%. In 1944 the total breeding population increased 18 pairs over that of 1941 (a 5.6% increase).—LAWRENCE E. HICKS, CHARLES A. DAMBACH, and GEORGE H. BREIDING, Ohio State University, Columbus, Ohio.

13. UPLAND OAK-HICKORY FOREST. An area of 35 acres composed of 3 main divisions, located in Eden Township, Licking County, Ohio. Fully described in previous reports and censused since 1937 (with the exception of 1942). It is the site of a Boy Scout camp, the operation of which has had an influence upon the bird population. This year no major change took place in the vegetational areas, and the garden areas created in 1941 have reverted back to natural cover. Coverage: continuous presence on the site for 30 hours on June 20 and 21, plus observational notes of campers and staff personnel covering a period of 4 days. Edge: no marked change from former years. Weather: no extended periods of subnormal or above-normal conditions. Census, pairs nesting and feeding on the census area (asterisks indicate species present but evidence was insufficient to establish them as males on territories or with mates): tufted grouse, 1P*; mourning dove, 1P*; yellow-billed cuckoo, 1P*; screech owl, 1P*; whip-poor-will, 1P; ruby-throated hummingbird, 2P; downy woodpecker, 1P; phoebe, 2N, 1Y; Acadian flycatcher, 2P; wood pewee, 2P; blue jay, 1P*; Carolina chickadee, 1Y; tufted titmouse, 1Y; white-breasted nuthatch, 1Y; Carolina wren, 1N; catbird, 1P*; robin, 1N; wood thrush, 1N, 1P; blue-gray gnatcatcher, 1P; yellow-throated vireo, 1N; red-eyed vireo, 1N, 4P; black and white warbler, 1Y; cerulean warbler, 2P; oven-bird, 2P; Kentucky warbler, 3P; cowbird, 2M, 2F; scarlet tanager, 1P; summer tanager, 1P; cardinal, 2P; indigo bunting, 1N; chipping sparrow, 1Y; song sparrow, 1P. Total: 23 species, 38 pairs definitely present; 32 species, 47 pairs probably present. Approximate density: 134 pairs per 100 acres. Irregular visitor: great blue heron, 1. Comment: The number of regular and irregular visitors could not be determined in the time spent in observation. Previous reports will indicate the probable density for such species. The absence of certain species in this census cannot be definitely stated, but no evidence was discovered of the presence of the field sparrow, yellow-breasted chat, crested flycatcher, and n. yellow-throat, species that have been on the decline or totally absent for the last couple of years. The opportunity for hole-nesting birds to nest faces a decline because of the reduced number of dead trees, especially of the large-toothed aspen, due to their decay and falling down and to the general dying out of these trees. In a few areas of the census tract the aspen has entirely disappeared, while in others it has nearly vanished. Several large dead oaks have fallen since 1942, thus materially reducing places to nest and feed for such species as the downy, hairy, red-bellied, and red-headed woodpeckers, flicker, crested flycatcher,

Carolina chickadee, and tufted titmouse. A vegetational factor beginning to appear is the character of the Norway spruce planting along the slope margin leading to the bottomland and north of the lodge. These trees are now 15-20 feet high and modify the original edge of the forest. The exact nature of this change cannot now be determined without further study.—Sgt. A. H. CLAUGUS, Newark, Ohio.

14. UPLAND OAK-HICKORY FOREST WITH POND. A 56-acre tract of cut-over oak-hickory uplands, with a small pond; located $\frac{1}{2}$ mile north of Berlin, Island Grove Township, Sangamon County, Illinois. Censused in 1941 and 1942, and fully described in previous reports. Since 1942, more breaks in the earth dam have reduced the pond to about 2 acres, and dense weed growth on the old pondbed attracted 3 pairs of birds. Progression of plant growth toward climax is particularly evident in areas grown to Crataegus and in areas where saplings of elm, green ash, black cherry, and honey locust are shading out the Crataegus growth. Some of these latter areas, where sapling growth is clogged with dead haw bushes, have become almost impenetrable. Weather: warm and settled during the census period with little rainfall. Coverage: May 15, 22, 29; June 1, 9, 14, 27. Total, about 29 hours. Census, pairs nesting and feeding within the study area: bob-white, 3P, 1Y; mourning dove, 3P; yellow-billed cuckoo, 3P; black-billed cuckoo, 1P; red-bellied woodpecker, 2Y; downy woodpecker, 1P, 1N; crested flycatcher, 6P; alder flycatcher, 1P; wood pewee, 2P; black-capped chickadee, 2P; tufted titmouse, 2P, 2Y; catbird, 2P; brown thrasher, 7P; blue-gray gnatcatcher, 1P; red-eyed vireo, 1P; Bell's vireo, 11P; n. yellow-throat, 3P; yellow-breasted chat, 6P; orchard oriole, 1Y; cardinal, 14P; indigo bunting, 8P; red-eyed towhee, 8P; field sparrow, 23P, 4N; song sparrow, 1P. Total: 24 species, 120 pairs. Density: 214 pairs per 100 acres. Pairs nesting in study area, but feeding at least in part outside it: green heron, 1P; Cooper's hawk, 1N; killdeer, 1Y; screech owl, 1P; flicker, 1P, 1N; red-headed woodpecker, 1N; blue jay, 2P; e. crow, 4N; house wren, 1N. Total: 9 species, 14 pairs. Density: 25 pairs per 100 acres. Grand total: 33 species, 134 pairs. Final density: 239 pairs per 100 acres (315 in 1942). Frequent visitors: chimney swift, 15 (average); wood pewee, 1P; barn swallow, 5 (average); robin, 4P; starling, 25 (average); e. meadowlark, 1P; bronzed grackle, 15 (average); goldfinch; towhee, 1P. Comment: Nearly all census work was done in late May and June, with the result that fewer nests and young were found although time spent on the area was about the same as in other years. The Cooper's hawk's nest was in the small climax area at the northern end of the tract and was found early in April. The known prey of this pair on the census tract consisted of 5 juncos, a tufted titmouse, and a female cardinal. Appearance of the blue-gray gnatcatcher is interesting, since the species is largely confined to climax woods in this area.—WILLIAM ROBERTSON, JR., Berlin, Ill.

15. OAK-MAPLE FOREST. Trelease Woods, a flat rectangular tract composed chiefly of sugar maple, red oak, American and slippery elm, white and blue ash; first described and censused in 1941. Size: about 56 acres, including $1\frac{1}{4}$ miles of forest edge. Location: about 4 miles northeast of Urbana, Illinois. Coverage: April 29; May 27; June 15; July 1, 15. Total man-hours, 25. Weather: warm with ample precipitation. Census: yellow-billed cuckoo, 6P; screech owl, 1P; flicker, 1P; red-bellied woodpecker, 1P; red-headed woodpecker, 1P; hairy woodpecker, 1P; downy woodpecker, 7P; crested flycatcher, 5P; wood pewee, 7P; blue jay, 1P; crow, 10P; tufted titmouse, 5P; house wren, 25P (20P in 1941; 31P in 1942; 40P in 1943); robin, 1P; wood thrush, 1P; starling, 12P; red-eyed vireo, 11P; oven-bird, 1P±; yellow-throat, 1P; yellow-breasted chat, 1P; English sparrow, 1P; cardinal, 2P; indigo bunting, 26P; dickcissel, 1P; goldfinch, 3P. Total: 25 species, 132 pairs. Density: 236 pairs per 100 acres (191 in 1941; 223 in 1942; 268 in 1943). Comments: Compared with 1943, the 37.5% drop in number of house wrens this year is of special interest.—H. H. SHOEMAKER, S. C. KNEDEIGH, Vivarium Bldg., University of Illinois, Champaign, Ill.

16. UPLAND OAK AND POPLAR (TULIP TREE) FOREST. An area of about 20 acres, located 6 miles north of Pamplin, Virginia; fully described in 1942 and

censused since that time. Coverage: almost continuous watching from April to the middle of July; special trips on April 18, 25; May 2, 17, 18, 25, 26; June 5, 7, 9, 11, 15; July 3, 16. Hours varied from 7 A.M. to 10.30 P.M., and totaled 65%. Weather: winter fairly normal; spring considered as unseasonable as last year. Precipitation has been below normal since January, and from May 25 to the present time (July 24) there has not been a single drenching rain. Census pairs nesting and feeding within the area: yellow-billed cuckoo, 1P; whip-poor-will, 3M; downy woodpecker, 1N; crested flycatcher, 1P; wood pewee, 1N; Carolina chickadee, 1N; tufted titmouse, 1P; brown thrasher, 1P; wood thrush, 3P; blue-gray gnatcatcher, 2P; yellow-throated vireo, 2M, 1P; red-eyed vireo, 3M, 5P; black and white warbler, 1N; prothonotary warbler, 1P; parula warbler, 1P; pine warbler, 1P; prairie warbler, 1M; oven-bird, 3M, 2P, 1Y; hooded warbler, 2M, 2P, 1Y; redstart 2P; summer tanager, 1M, 1P; cardinal, 1M; red-eyed towhee, 1P. Total: 23 species, 48 pairs. Density: 240 pairs per 100 acres. Pairs nesting within the area, but feeding chiefly outside it: sharp-shinned hawk, 1P; red-shouldered hawk, 1N; mourning dove, 1N; barred owl, 1M; ruby-throated hummingbird, 1P; cardinal, 1P. Total: 5 additional species, 6 pairs. Grand total: 28 species, 54 pairs. Final density: 270 pairs per 100 acres (340 in 1942; 250 in 1943). Frequent visitors: Cooper's hawk, 1P; flicker, 1; phoebe, 5Y; blue jay, 4; crow, 5; white-breasted nuthatch, 1P; Carolina wren, 1P; red-eyed vireo, 1P; yellow-breasted chat, 1; goldfinch, 4. Foraging areas:

Number plotted	Species	Minimum	Acres Average	Maximum
1	wood pewee	—	0.7	—
1	Carolina chickadee ...	—	1.3	—
1	brown thrasher	—	0.6	—
8	red-eyed vireo	0.6	0.9	2.3
1	black and white warbler	—	2.4	—
1	prairie warbler	—	0.7	—
6	oven-bird	0.5	0.7	1.2
4	hooded warbler	0.8	0.9	1.0
1	red-eyed towhee	—	1.2	—

Comment: Population changes, resulting from the logging of pines in the northeast corner of the area in 1942, are just becoming evident in the disappearance of one or two species and the appearance of several new ones (prairie warbler, towhee, etc.) in the short brush. Observations now indicate that the blue-gray gnatcatcher was inadequately censused in previous years. Note the appearance of the prothonotary warbler in a wet corner. Reduction in density of "standard" species appears to be due to poor weather conditions, which reduced available food supplies.—MORTON MARSHALL, Pamplin, Va.

17. UPLAND HEMLOCK-OAK FOREST. Heavily wooded tract of hemlock and oak, with considerable number of large tulip poplars; undergrowth predominantly spicebush, poison ivy, and honeysuckle, which averages 6 feet in height; trees average about 50 feet. The tract is typical woodland of precivilized Philadelphia (entirely within city limits); 2-3 dead trees per acre. The area, which includes 2 homes, an upland meadow with a small stream running along one side (dammed at one point), is part of Fairmount Park, but is in a stabilized condition that is likely to be maintained. Size: 61 acres (surveyed). Location: Mt. Airy, Philadelphia, Pa. Triangular; bounded by residential section and extension of similar woodlands. Topography: low, steep-sided hills, one stream, one small pond. Edge: practically none, unless the proximity of residential areas and their resultant influence on robins, catbirds, etc., can be considered. Coverage: May 1-August 12, 1942; over 75 counts taken at all hours; hours totaled 264. Weather: normal until late July when exceedingly high humidity and heavy rains occurred. Census: mallard, 1N; broad-winged hawk, 1P; ring-necked pheasant, 1N; mourning dove, 1N; flicker, 2N; hairy woodpecker, 1N; downy woodpecker, 2N; phoebe, 1N; e. wood pewee, 1UM; blue jay, 2N; e. crow, 1N; tufted titmouse, 1N; house wren, 1P; catbird, 3N, 1P; e. robin, 13P (18N), 2Y; wood thrush,

2N, 4P; red-eyed vireo, 2N, 5P; oven-bird, 3M; Kentucky warbler, 3N, 2P; n. yellow-throat, 1P (2N), 1M; cardinal, 4Y; indigo bunting, 2P (3Y); goldfinch, 1P; towhee, 1Y; chipping sparrow, 1Y; field sparrow, 1Y; e. song sparrow, 1N, 4P, 2Y. Total: 27 species, 74 pairs plus 1 unpaired male. Density: 122 pairs per 100 acres. Pairs nesting within area, but feeding outside it: screech owl, 1Y; e. robin, 1N; starling, 1N; cowbird, 2N (wood thrush, 1; red-eyed vireo, 1). Total: 3 additional species, 3 pairs plus 2 cowbirds. Grand total: 30 species, 78 pairs plus 1 unpaired male. Final density: 129 pairs per 100 acres. Frequent visitors: crested flycatcher, 1M; brown thrasher, 2P; purple grackle, 2P; scarlet tanager, 1M. Visitors, which included odd individuals appearing on and off during the season, averaged about 10 individuals per trip.—J. C. TRACY, C. C. ROSS, A. W. STOKES, E. B. WRIGHT, and members of the Germantown Friends' School Bird Club. Census taken under the auspices of the Delaware Valley Ornithological Club of Philadelphia.

18. SIXTY-FOOT OAK, HICKORY, AND PINE FOREST. An area of 24 acres, located on the Dandridge farm in Shepherdstown, West Virginia; fully described in 1942 and studied since that time. Coverage: almost daily visits throughout the breeding season until about July 1. Weather: very rainy from March until mid-May, the leaves appearing before the warblers; thereafter, a severe 2-months' drought. Census: mourning dove, 3P; yellow-billed cuckoo, 1P; black-billed cuckoo, 2P; whip-poor-will, 1P; crested flycatcher, 8P, 1Y; wood pewee, 4P, 1Y; Am. crow, 1P; Carolina chickadee, 2P; tufted titmouse, 2P, 1Y; Carolina wren, 1P; wood thrush, 3P; blue-gray gnatcatcher, 2P; red-eyed vireo, 11P; worm-eating warbler, 1P; oven-bird, 3P; cowbird, heard constantly, 6 or 7 at a time; scarlet tanager, 3P; summer tanager, 2P, 1Y; cardinal, 1P; indigo bunting, 4P; goldfinch, 1P; red-eyed towhee, 1P; vesper sparrow, 1P; chipping sparrow, 3P; song sparrow, 1P. Total: 25 species, 66 pairs exclusive of the cowbirds. Density: at least 275 pairs per 100 acres (254 in 1942; 250 in 1943). Feeding within area, but nesting elsewhere: barred owl, ruby-throated hummingbird, blue jay, white-breasted nuthatch, house wren, yellow-breasted chat, goldfinch. Flying overhead: black and turkey vultures, nighthawk, chimney swift. Comment: A pair of wood ducks searched for a nesting site early in the season. A Louisiana water-thrush remained for a month but left when the water in its ravine dried up. This tract appears to be the most thickly populated part of 100 acres of woodland on this farm.—S. K. DANDRIDGE, Shepherdstown, W. Va.

19. CEMETERY WITH EDGE EFFECT. A fairly open tract traversed by 5 miles of roadway and consisting of second-growth hardwoods, ornamental conifers, and grassy areas. Hardwoods average about 35 trees per acre and, in the order of their abundance, consist of: white oak (*Quercus alba*), black oak (*Q. velutina*), white elm (*Ulmus americana*), silver maple (*Acer saccharinum*), sugar maple (*A. saccharum*), bur oak (*Q. macrocarpa*), white ash (*Fraxinus americana*), catalpa (*Catalpa speciosa*), shagbark hickory (*Carya ovata*), yellow birch (*Betula lutea*), and basswood (*Tilia americana*); these trees average 40-60 feet in height and about 10.16 inches DBH. Approximately 500 white spruce (*Picea glauca*) are scattered throughout the cemetery and have been kept pruned to ensure a dense foliage. In their order of abundance, conifers are: white spruce, red cedar (*Juniperus virginiana*), arborvitae (*Thuja occidentalis*), Norway spruce (*Picea excelsa*), Scotch pine (*Pinus sylvestris*), juniper (*Juniperus sp.*), and Colorado blue spruce (*Picea pungens*). Deciduous shrubs, in the order of their abundance, consist of: bridal wreath (*Spiraea Van Houttei*), lilac (*Syringa vulgaris*), snowball (*Viburnum opulus* var. *sterile*), and syringa (*Philadelphus coronarius*). No heavy traffic through study area, but hundreds of visitors on week-ends and on Memorial Day. Size: 88 acres (cemetery, 80 acres; railroad right of way and edge of golf course, 8 acres). Location: Forest Hill Cemetery, Madison, Wisconsin. Topography: gently rolling. Edge: County Highway S. to the northwest, a golf course to the southwest, a railroad right of way on the southeast, and the backyards of city homes on the east. Along the edge provided by the golf course, a nursery of 73 closely planted spruce (15 feet high), supported 16% of the breeding population. Water: nearest natural water 1 mile distant; dripping water and many bird baths

PART IV — OTHER BROAD-LEAVED (DECIDUOUS) WOODLANDS

Habitat	State	Acres	Hrs. Obs.	Year	Adults per 100 Acres	Contributor
20. Eastern deciduous forest..	N. Y.	25	90	1944	816	G. Komorowski
21. Southern hardwood forest.	Ala.	10	45	1943	1440	R. S. Willingham, Jr.
			26	1944	1400	" " "
22. Northern hardwoods and conifers	N. H.	21	43	1941	829	Vera H. Wallace
			24	1942	739	" " "
			20	1943	762	" " "
			20	1944	771	" " "
23. Dense lowland beech-maple forest	Ohio	55.3	60	1940	445	E. O. Mellinger
			56	1941	405	" " "
			60	1942	430	" " "
			47	1943	474	" " "
			40	1944	492	" " " , P. A. Stewart
24. Sugar maples						
(a) Ungrazed	Ohio	7.9	10	1940	304	C. A. Dambach
			28	1941	430	" " "
			83	1942	530	" " "
			12	1944	532	" " "
(b) Grazed		12.6	18	1940	47	" " "
			25	1941	111	" " "
			83	1942	126	" " "
		12.4	12	1944	145	" " "

within the area. Surveys: weekly from Jan. 21 to Apr. 25. Coverage: Apr. 26, 30; May 1, 3, 7, 10, 14, 19, 20, 22, 24, 29; June 1, 4, 5, 9, 11, 15, 20, 24, 30; July 7, 18. Hours varied from 3.30 A.M. to 7 P.M., averaged 4 per trip, and totaled 144. Weather: winter mild; April abnormally cold; May normal; June wet and hot. Rain-fall 3.5 inches above normal by July 1. Census (figures in parentheses represent second nesting attempts): mourning dove, 16N (5N, 1Y); black-billed cuckoo, 2P; flicker, 4N; red-headed woodpecker, 3N; downy woodpecker, 1N; crested flycatcher, 1N, 1P; wood pewee, 2N, 2P; bank swallow, 14N; blue jay, 3N, 5Y (a pair of uncertain history was seen feeding young on July 18); crow, 1N; black-capped chickadee, 2P; white-breasted nuthatch, 2P; house wren, 1PY; catbird, 8N, 1P; brown thrasher, 2N, 3Y (1N); robin, 68N (24N, 7Y); e. meadowlark, 1Y, 1PY; Baltimore oriole, 1N, 1P, 1PY; bronzed grackle, 4N; cowbird, 6-10 individuals seen on each trip (counted as 4P); cardinal, 2P (a female of uncertain history was also seen nest building on July 18); rose-breasted grosbeak, 2P, 1Y; indigo bunting, 2P; chipping sparrow, 3N, 2P. Total: 24 species, 167 pairs. Density: 190 pairs per 100 acres. Frequent visitors: nighthawk, chimney swift, least flycatcher, purple martin, house wren, cedar waxwing, starling, red-eyed vireo, warbling vireo, English sparrow, goldfinch, song sparrow. Comment: 167 nests were actually located. Before June 1, 83 robin nests were found, but our count of individual robins never exceeded 150 after the migration peak. We feel that the 15 pairs that abandoned their nests before May 7 probably rebuilt, so we are reporting only the 68 nests we knew to be occupied at one time. Of the 83 robin nests, 41 failed and 42 were successful. Of the latter, 36 were low enough to see into; 103 young left these nests, or an average of 2.8 per nest. On this basis we estimated 118 young robins on the area: a census on June 20 showed 94 young, so some probably died in those 3 weeks.—MRS. ARTHUR KOEHLER, GEORGE KOEHLER, 109 Chestnut St., Madison, Wis.

20. EASTERN DECIDUOUS FOREST. Nearly 1/2 of this tract consists of a mature bottomland forest, about 60% of which is composed of American elm, the remaining 40% being silver and sugar maples, ash,

linden, pin oak, red oak, black oak, and birch; the undergrowth is composed of nettle, skunk cabbage, joe-pye weed, ironweed, arrowroot, etc. The rest of the study area is a ridge forest with a larger percentage of ash, horse-chestnut, linden, sugar and silver maples, and some New York City park buildings; this part of the tract is less even-aged, artificially opened in some places, and has an undergrowth of brambles, nettle, alder, ironweed, etc. Size: 25 acres (estimated). Location: New York Botanical Gardens (Bronx Park), Bronx, New York. Topography: (a) flat bottomlands with a short rise on the west and the Bronx River on the east, (b) a sharp ridge, and (c) rolling upland. Edge: edge effects created by park trails, artificial openings, the Bronx River running through the middle of the tract, and dissimilar environment bordering the study area; on the north are fields (see census no. 6) and a stand of open willows, on the west a grassy field and a baseball diamond, on the south a wide boulevard (Allerton Ave.) separating the tract from similar forest, on the east another avenue (Bronx Park East) marking the beginning of a heavily settled apartment-house district. Surveys: frequent trips for the last 9 years. Coverage: daily throughout May; June 3, 5, 11, 14, 17, 22-24, 26, 28, 30; July 3-6, 14, 20, 21, 24, 25. Hours varied from 6 A.M. to 8.30 P.M., and totaled 90. Census: mallard, 2P, 1N, 1Y; wood duck, 1P, 1Y; ring-necked pheasant, 1P; chimney swift, 6P; belted kingfisher, 1P, 1Y; flicker, 3P, 2Y; hairy woodpecker, 1P; downy woodpecker, 1P, 1Y; crested flycatcher, 1P, 1Y; blue jay, 1P, 1Y; white-breasted nuthatch, 1Y; catbird, 4P, 1Y, 1N; brown thrasher, 2P; robin, 4P, 4Y, 2N; wood thrush, 3P (2N), 2Y; starling, 4P, 2N, 1Y; red-eyed vireo, 2P, 1Y; warbling vireo, 1P, 1N; yellow warbler, 1P, 1N; n. yellow-throat, 1P, 1N; English sparrow, 2P, 1N, 1Y; Baltimore oriole, 3P, 2N, 2Y; purple grackle, 3P, 2N, 2Y; cowbird, 1P; goldfinch, 1P; chipping sparrow, 1P, 1Y; swamp sparrow, 1P; song sparrow, 6P, 3Y, 2N. Total: 29 species, 102 pairs. Density: about 406 pairs per 100 acres. Comment: The rich woodland now standing along this river represents the climax of the plant succession just beginning in census no. 6.—GEORGE KOMOROWSKI, Linnaean Society of New York, New York, N. Y.

21. ISLAND OF MATURE SOUTHERN HARDWOOD FOREST. An isolated 60-foot stand of rather open timber, with considerable undergrowth in spots; composed of hardwoods with a few pines. Described and censused for the first time in 1943. **Size:** 10 acres. **Location:** Chambers County (east-central), Alabama, ½ mile south of the town of La Fayette. **Coverage:** March 15, 31; April 8, 9, 12, 15; May 15, 20, 23, 25, 30; June 1, 2, 5, 8, 10, 20; July 1, 3. **Total:** 26 hours. Most trips were made from 5-9 A.M. and from 5-7 P.M., although several midday and night trips were made. **Census, pairs nesting and feeding within the study area:** bob-white, 2N; ruby-throated hummingbird, 6N, 1Y (12N in 1943); red-bellied woodpecker, 1N, 1Y; red-headed woodpecker, 1Y; downy woodpecker, 2N; crested flycatcher, 3N; wood pewee, 2N; blue jay, 2N; black-capped chickadee, 2Y; brown-headed nuthatch, 1Y; Carolina wren, 2N, 1Y; catbird, 1N; brown thrasher, 3N; wood thrush, 3N; blue-gray gnatcatcher, 4N; white-eyed vireo, 1N; yellow-throated vireo, 3N; red-eyed vireo, 4N, 1Y; black and white warbler, 1N; pine warbler, 1N, 1Y; Maryland yellow-throat, 2P; yellow-breasted chat, 1N; orchard oriole, 1N; summer tanager, 3N; cardinal, 1N; red-eyed towhee, 3N, 1Y. **Total:** 26 species, 62 pairs. **Density:** 620 pairs per 100 acres (670 in 1943). **Pairs nesting in area, but feeding largely elsewhere:** mourning dove, 2N; screech owl, 2N; blue grosbeak, 2N; indigo bunting, 2N. **Total:** 4 species, 8 pairs. **Density:** 80 pairs per 100 acres. **Grand total:** 30 species, 70 pairs. **Final density:** 700 pairs per 100 acres (770 in 1943). **Frequent visitors:** crow; yellow-throated warbler, singing male; goldfinch (flocks); yellow warbler, 1P; redbird, 4; Cooper's hawk, 1M; prairie warbler, 1P; mockingbird, 1M. **Comment:** A storm during early spring blew down 9 large pines. This is the only factor I see that could have affected the hummingbird density. Last year's hummingbird count was raised from 9N to 12N after a midwinter census for old nests. The corrected totals now appear above.—ROBERT S. WILLINGHAM, JR., La Fayette, Ala.

22. NORTHERN HARDWOODS AND CONIFERS WITH SMALL FIELDS. An area of 21 acres in New Hampton, New Hampshire, described and censused since 1941. No change in the tract has taken place during the past year. **Coverage:** May 2, 6, 9, 14, 25, 28; June 4, 5, 13, 18, 23; July 7, 8, 14. **Hours varied from** 5.30 A.M. to 12 M., and totaled 20. **Weather:** Winter temperatures were above average with much more snow than normally. During the spring, snow melted very slowly, and there was little or no precipitation. Summer temperatures and precipitation were average. **Census, pairs nesting and feeding within the study area:** ruffed grouse, 1P; flicker, 1Y; least flycatcher, 2P; red-breasted nuthatch, 1Y; catbird, 1P; robin, 2Y (4N); veery, 1P; red-eyed vireo, 1P; warbling vireo, 1P; black and white warbler, 1Y; Nashville warbler, 2P; myrtle warbler, 1P; blackburnian warbler, 2P; chestnut-sided warbler, 1P; pine warbler, 1P; oven-bird, 3P; n. yellow-throat, 1P; redbird, 1P; Baltimore oriole, 1Y; indigo bunting, 1P; purple finch, 2P; chipping sparrow, 2P, 2Y. **Total:** 22 species, 32 pairs. **Density:** 152 pairs per 100 acres. **Pairs nesting within the area, but feeding outside it:** chimney swift, 2P; flicker, 1P; kingbird, 1P; crested flycatcher, 1Y; least flycatcher, 3P; wood pewee, 2P; tree swallow, 1N; barn swallow, 1N; catbird, 1P; robin, 2Y (4N); hermit thrush, 3P; bluebird, 1Y (2N); cedar waxwing, 2P; blue-headed vireo, 1Y; red-eyed vireo, 1P; black-throated green warbler, 2P, 1Y; blackburnian warbler, 5P; chestnut-sided warbler, 1P; oven-bird, 4P; Baltimore oriole, 2P, 1Y; bronzed grackle, 1P; indigo bunting, 1P; goldfinch, 3P; chipping sparrow, 2P, 2Y; song sparrow, 1Y. **Total:** 14 additional species, 49 pairs. **Density:** 233 pairs per 100 acres. **Grand total:** 36 species, 81 pairs. **Final density:** 386 pairs per 100 acres (133 in 1941; 319 in 1942; 381 in 1943). **Frequent visitors:** great blue heron, black-billed cuckoo, chimney swift, ruby-throated hummingbird, yellow-bellied sapsucker, hairy woodpecker, downy woodpecker, kingbird, phoebe, blue jay, crow, chickadee, white-breasted nuthatch, brown creeper, bluebird, cedar waxwing, starling, red-eyed vireo, warbling vireo, red-wing, scarlet tanager (1Y), rose-breasted grosbeak, vesper sparrow, slate-colored junco, chipping sparrow, song sparrow. **Comment:** The bluebird nested under the eaves of a shed, in the manner of English sparrows.—VERA H. (MRS. CLINTON) WALLACE, New Hampton, N. H.

23. DENSE LOWLAND BEECH-MAPLE FOREST. An area of 55.3 acres located 6 miles south of Youngstown, Ohio; fully described in 1940 and censused annually thereafter. The tract comprises the south-central portion of the Boardman woods. **Coverage:** April 17, 19, 22, 23, 30; May 20, 21, 28; June 11, 18; July 2, 9. **Total,** 40 hours. In addition, 2 nights were spent in the area. Albert T. Hartley and Raymond O. Marshall assisted in the survey on 2 trips each, and Frank Ferris on 1 trip. **Weather:** The winter, with near-normal temperature and subnormal precipitation, was followed by a spring with slightly above-average temperature and rainfall. In the early summer, temperature continued above normal while rainfall dropped below normal. By early July the dry weather produced a marked effect on vegetation. **Census** (including those pairs reported by E. O. Mellinger in previous years; x indicates birds present):

	'40	'41	'42	'43	'44
wood duck	—	—	1	—	—
saw-whet owl	—	—	1	—	—
mourning dove	—	—	—	—	1
yellow-billed cuckoo	1	—	—	1	1
ruby-throated hummingbird	2	2	2	2	—
pileated woodpecker	—	1	1	—	1
red-bellied woodpecker	1	2	1	1	1
hairy woodpecker	2	1	2	2	1
downy woodpecker	2	3	3	2	2
crested flycatcher	2	3	4	2	2
Acadian flycatcher	8	8	7	9	10
wood pewee	9	9	8	9	10
blue jay	3	2	2	2	1
black-capped chickadee	—	2	1	1	1
tufted titmouse	7	8	6	8	9
white-breasted nuthatch	3	3	2	3	2
wood thrush	7	5	7	8	9
blue-gray gnatcatcher	—	1	—	—	—
yellow-throated vireo	1	2	2	2	4
red-eyed vireo	17	10	12	15	15
blue-winged warbler	5	1	4	3	2
cerulean warbler	8	7	9	8	9
oven-bird	20	19	19	19	17
Louisiana water-thrush	—	—	—	2	1
n. yellow-throat	2	1	—	1	1
redstart	12	8	12	18	17
cowbird	x	x	x	x	x
scarlet tanager	5	7	6	6	7
cardinal	3	5	4	4	3
indigo bunting	3	—	—	1	—
rose-breasted grosbeak	—	—	—	—	1
red-eyed towhee	—	1	3	2	3
song sparrow	—	1	—	—	1
Total species	22	25	24	26	28
Total pairs	123	112	119	131	136
Pairs per 100 acres	222	203	215	237	246

The average total for the 5-year period was 124 pairs, and the average density 225 pairs per 100 acres. Fluctuations during the 5 years were about $\pm 10\%$ of the mean average. **Frequent visitors:** barred owl, red-shouldered hawk, crow, robin (after July 2); goldfinch (until June 11); cedar waxwing (May 28 only). One nest each of the hairy woodpecker and blue jay were found only a few feet outside the area, although the adult birds were seen regularly within it.—CORONEL E. O. MELLINGER, U. S. Army, and PAUL A. STEWART, Leetonia, Ohio.

24. GRAZED AND UNGRAZED SUGAR MAPLE WOODLAND. A 12.4-acre grazed and an adjacent 7.9-acre ungrazed sugar maple woodland located in Burton Township, Geauga County, Ohio. Both areas were

PART V — CONIFEROUS WOODLANDS

Habitat	State	Acres	Hrs. Obs.	Year	Adults per 100 Acres	Contributor
5. Jack pine barrens.....	Mich.	16	162 126 136	1942 1943 1944	356 275 212	J. Van Tyne, Frances and F. N. Hamerstrom, Jr. J. Van Tyne, H. Mayfield, L. D. Hiatt
6. Pitch pine barrens and cedar bog	N. J.	76	100 130 75 250 75 200 150	1938 1939 1940 1941 1942 1943 1944	200 168 194 263 242 221 237	David Fables " " " " " " " " " " " , Paul Shubeck
7. Northern forest	Idaho	12.9	62	1944	868	W. H. Longley
8. White pine-hemlock forest	Vt.	50	20 20 25 30 35 35 40 45	1934 1936 1939 1940 1941 1942 1943 1944	308 300 340 342 380 450 536 590	W. P. Smith " " " " " " " " " " " " " "

described in 1939 and, with the exception of 1943, have been censused since 1938. Since the last report, the stand of young trees in the ungrazed woods has increased in height but decreased in density. Dense colonies of seedling sugar maple and tulip poplar still remain in some openings. Otherwise there is evidence that the older colonies are becoming thin enough to permit growth of herbaceous plants. A sparse stand of bluegrass is in evidence throughout the grazed woods, indicating continued retrogression. Light spring grazing, however, has permitted a moderate stand of seedling sugar maple and wild black cherry to develop. A heavy outbreak of spring cankerworm was present in both woods. Fecal matter was dropped on the forest floor by these insects in such volume as to produce a sound not unlike a soft pin on a metal roof. All butternuts in the grazed woods were completely defoliated by an as yet unidentified insect. The tops of 2 sugar maple trees were defoliated in the ungrazed woods by cankerworms. No serious damage was evident in the ungrazed tract. Coverage: 6 early-morning counts (5-8 A.M.) were made May 26, 27, 28; June 11, 12, 13). In addition 4 hours were spent in the 2 tracts during the afternoon of May 28, and 2 hours on June 11. Weather: The May counts were preceded by a period of frequent hard rains and understorms. During the census periods, the weather was unseasonably warm with storms threatening. Temperatures were above normal for these dates. Census, ungrazed woods: flicker, 1P; downy woodpecker, 1P; bluebird, 1N; wood pewee, 1P; e. crow, 2N; white-breasted nuthatch, 1P; e. robin, 1N; red-eyed vireo, 1M; blue-winged warbler, 1M; oven-bird, 1M; scarlet tanager, 1M; cowbird, 1P; indigo bunting, 3M; towhee, 2P; field sparrow, 1Y; song sparrow, 3M. Total: 16 species, 21 pairs. Density: 266 pairs per 100 acres (197 in 1937; 127 in 1939; 152 in 1940; 215 in 1941; 266 in 1942). Visitors: Brewster's warbler (probably a transient male; observed in good light for 15 minutes, May 27 and 28; its song was characteristic of the golden-winged warbler song); crested flycatcher, 1M (from adjacent grazed woods); goldfinch, 3P (at least, observed each morning); bronzed grackle, 1 or more each day feeding in cankerworms; catbird, 1M. Census, grazed woods: crested flycatcher, 1Y; wood pewee, 1M; e. crow, 1N; white-breasted nuthatch, 1P; e. robin, 1P; yellow-throated vireo, 1M; red-eyed vireo, 1M; oven-bird, 2M. Total: 8 species, 9 pairs. Density: 73 pairs per 100

acres (47 in 1938; 40 in 1939; 24 in 1940; 55 in 1941; 63 in 1942). Visitors: bronzed grackle, several (feeding on cankerworms); flicker, 1. Comment: A large buck white-tailed deer was jumped from a maple thicket in the ungrazed woods, June 12, 1944.—CHARLES A. DAMBACH, Cooperative Wildlife Research Unit, Ohio State University, Columbus, Ohio.

25. JACK PINE BARRENS. A square area of 16 acres of small jack pine and scrub oak (Kirtland's warbler habitat) censused by Van Tyne and F. N. and F. Hamerstrom in 1942 and 1943. Location: in Section 19, T.25N., R.4 E., Oscoda County, Michigan; tract marked with stakes and registered at Mack Lake headquarters of Huron National Forest. Coverage: June 4 to 29; total, 136 man-hours. Weather: no unusual conditions; little extremely hot weather. Census: black-billed cuckoo, 1P; brown thrasher, 1N, 1P; robin, 1N; hermit thrush, 1P; Kirtland's warbler, 2N; oven-bird, 1P; cowbird, 1F, 4M; vesper sparrow, 1N; slate-colored junco, 1N; chipping sparrow, 1N, 3P; clay-colored sparrow, 2N. Total: 11 species, 16 pairs, plus 1 "pair" of cowbirds. Density: 106 pairs per 100 acres. Frequent visitors: turkey vulture, 1; marsh hawk, 1; upland plover, 1P; mourning dove, 1; nighthawk, 2; flicker, 1; kingbird, 1P; tree swallow, 2; blue jay, 2; crow, 3; black-capped chickadee, 2; brown thrasher, 1P; bluebird, 1P; cedar waxwing, 1P; black and white warbler, 1Y; Nashville warbler, 1M; Kirtland's warbler, 2P; prairie warbler, 2; oven-bird, 1M; goldfinch, 1P; red-eyed towhee, 1M; vesper sparrow, 1P; chipping sparrow, 2P; clay-colored sparrow, 2P; field sparrow, 1M. Combined total: 30 species, 86 adults.—JOSSELYN VAN TYNE, Ann Arbor, Mich., HAROLD MAYFIELD and LAWRENCE D. HIATT, Toledo, Ohio.

26. PITCH PINE BARRENS AND CEDAR BOG. The area (71.8 acres of pine woods and 4.2 acres of cedar bog) is located at Pine Lake Park, Toms River, New Jersey. Censused since 1938 and fully described in the report for that year. The tract has not been touched by fire since 1930. Pitch pines averaged 7 feet in height in 1938 (in section of census area burned in 1930) and 10 feet in 1944, their average growth this year being 8 inches. The cedars in the burned area of the bog now average 4 feet in height. Water: Average depth in cedar bog is 5 inches; stream passing

through bog averages 3 feet in depth. Coverage: June 19-July 10, daily. Total, 150 hours. Census: (N and Y within parentheses indicate nests actually found and young observed within the area). e. bob-white, 2P; woodcock, 1P; e. mourning dove, 2P (10Y); yellow-billed cuckoo, 1P; black-billed cuckoo, 1P; e. whip-poor-will, 4P; e. nighthawk, 2P; ruby-throated hummingbird, 1P; n. flicker, 2P (2N, 8Y); e. hairy woodpecker, 1P; n. downy woodpecker, 2P (1N, 4Y); e. kingbird, 2P; n. crested flycatcher, 3P; e. wood pewee, 3P; n. blue jay, 1P; e. crow, 2P (1N, 6Y); Carolina chickadee, 1P (4Y); white-breasted nuthatch, 1P; catbird, 4P; brown thrasher, 2P; e. robin, 2P; e. bluebird, 1P (1N, 4Y); red-eyed vireo, 1P; black and white warbler, 2P (3Y); n. pine warbler, 3P (6Y); n. prairie warbler, 7P (1N, 12Y); oven-bird, 1P; n. yellow-throat, 4P (4Y); e. red-wing, 1P (3Y); purple grackle, 2P (8Y); cowbird, 1P; e. goldfinch, 1P; red-eyed towhee, 20P (2N, 30Y); e. chipping sparrow, 2P (1N, 3Y); e. field sparrow, 3P; e. song sparrow, 1P. Total: 36 species, 90 pairs (105 young). Density: 118 pairs per 100 acres (100 in 1938; 84 in 1939; 97 in 1940; 132 in 1941; 121 in 1942; 111 in 1943). Visitors: great blue, little blue, and green herons, turkey vulture, chimney swift, barn swallow, and purple martin. Comment: The red crossbill is missing here for the first time since 1935, although it may yet appear in August, as it has so frequently done in the past. The nesting of this species here has usually been completed by June 20. Towhee numbers are still somewhat in doubt and are approximate only (there are about 20 females in the area). The number of males seemed to be below average this year, but 50 singing males is a conservative figure. Seemingly, the number of unmated males would be about 30. This special problem will require increased attention. Among other species, the sex ratio seemed to be well balanced. Ranging outside the area for part of their food supply were: woodcock, whip-poor-will, nighthawk, hummingbird, white-breasted nuthatch, and red-wing. During the past 2 years, Fables has censused approximately $3\frac{1}{2}$ square miles of pine barrens and cedar bogs, of which the 76 acres here reported are a part. Although a final density figure has not yet been computed, it is believed that this will be about 80-85 pairs per 100 acres.—PAUL SHUBECK, 440 Bond St., Elizabeth, N. J. DAVID FABLES, 421 Walnut St., Roselle Park, N. J.

27. NORTHERN FOREST. Typical growth of moist, rich soil in northern Idaho. Douglas fir, western hemlock, and western birch are the dominant trees, in that order of abundance. Canopy largely open; particularly dense sapling growth and underbrush, ranked in abundance as follows: salmon-berry (*Rubus parviflorus*), snow-berry and wolfberry (*Symphoricarpos albus* and *S. occidentalis*), viburnum (*Viburnum dentatum*?), dogwood (*Cornus pubescens*), mock-orange (*Philadelphus* sp.), nine-bark (*Physocarpus* sp.), western birch (*Betula occidentalis*), aspen (*Populus tremuloides*), vine maple (*Acer circinatum*), mountain alder (*Alnus tenuifolia*), serviceberry (*Amelanchier florida*), a wild rose (*Rosa macounii*?), choke cherry (*Prunus virginiana*), blue-berried elder (*Sambucus caerulea*). A common but inconspicuous low evergreen is holly-harberry (*Mahonia repens*). Trees average 60+ feet in height and about 10 inches DBH (a few western larch and Ponderosa pine reach 90+ feet). The area consists of 60% Douglas fir, 20% western hemlock, 10% western birch, and 10% of Ponderosa pine, western larch, and balsam poplar. Decayed and fallen trees, snags, and stumps are numerous. No record of logging or fire. Size: 12.9 acres (paced 250 yards square). Location: $\frac{3}{4}$ mile northeast of Bayview, Idaho, on Dromore Road. Topography: a south-facing hillside, sloping from 10° to 30°. Water is supplied by a spring, which is exposed for 100 yards to the south. Ede: a trail and numerous clearings within the area. Surveys: mapping trips in December, January, and February. Coverage: March 5, 6, 7, 12, 19, 21, 26; April 2, 9, 16, 23, 30; May 5, 14, 28; June 4, 11, 12, 18, 25; July 2, 9. Hours: varied from 4 a.m. to 9.10 p.m., and totaled 62. Weather: normal during census. Previous winter unusual, very open and warm. Census: ruffed grouse, 1P; screech owl, 1P; rufous hummingbird, 1P, 1N; calliope hummingbird, 1P; red-naped sapsucker, 1P, 1N; Hammond's flycatch-

er, 1P, 1Y; Wright's flycatcher, 1N; black-capped chickadee, 2N; mountain chickadee, 1N; winter wren, 1P; varied thrush, 1P; russet-backed thrush, 2P, 2N; golden-crowned kinglet, 2N, 1Y; red-eyed vireo, 4P, 2N; warbling vireo, 1P, 1Y; Calaveras warbler, 1P; yellow warbler, 1P, 2N, 2Y; Audubon's warbler, 1P; MacGillivray's warbler, 2P, 2Y; Am. redbstart, 1P, 2N, 2Y; w. tanager, 1P; pine siskin, 1P, 1N; spotted towhee, 1N, 1Y; Oregon junco, 2P; chipping sparrow, 2Y; fox sparrow, 1P. Total: 26 species, 56 pairs. Density: 434 pairs per 100 acres. Visitors: turkey vulture, Cooper's hawk, red-tailed hawk, mourning dove, red-shafted flicker, pileated woodpecker, hairy woodpecker, olive-sided flycatcher, violet-green swallow, Steller's jay, raven, crow, catbird, robin, ruby-crowned kinglet, black-throated gray warbler, black-headed grosbeak, Cassin's purple finch. Comment: Territories were determined for a number of species. Movements of the singing male were the basis for the most part, but in a few instances the pair outlined the area, together or separately. Thus, territories for the grouse, chickadee, varied thrush, kinglet, and MacGillivray's warbler were known by the movements of both birds. Sizes of the territories (in acres) were as follows: ruffed grouse, 10; Hammond's flycatcher, 2.2; Wright's flycatcher, 0.8; black-capped chickadee, 3; winter wren, 0.9; varied thrush, 1.5; warbling vireo, 1.5; Calaveras warbler, 2; Audubon's warbler, 1.7; fox sparrow, 2; golden-crowned kinglet (3P), 2, 2.5, 4; red-eyed vireo (5P), 0.5, 0.75, 0.8, 1.3, 1.5; MacGillivray's warbler (2P), 1.5, 2.25; redbstart (4P), 0.5, 0.6, 0.8, 1.2; spotted towhee (2P), 0.8, 0.9.—WILLIAM H. LONGLEY, Bayview, Idaho.

28. WHITE PINE-HEMLOCK FOREST. A tract of 50 acres of steep hillside culminating in a ridge with many outcropping ledges, located at Wells River, Vermont, and fully described in 1939. Censused in 1934, 1936, and continuously since 1939. Practically the only change since 1941 has been the death of many hurricane-injured trees and the progress of natural reforestation, which has seemingly been greater than in any previous year. Area bounded by forest land on most of one side, where timber was removed 11 years ago. Other boundaries are the Wells River, a railroad right of way, and an open pasture. Coverage: June 8, 18, 28; July 4, 16; and frequent observations throughout the season. Total, 45 hours. Census (* indicates permanent resident): *Canada ruffed grouse, 1Y; *saw-whet owl, 1P; e. whip-poor-will, 1P; ruby-throated hummingbird, 1P; n. flicker, 2Y; *n. pileated woodpecker, 1P; yellow-bellied sapsucker, 1P, 1Y; *e. hairy woodpecker, 1N, 1P, 1Y; *n. downy woodpecker, 1P; n. crested flycatcher, 1Y; e. wood pewee, 3P; olive-sided flycatcher, 1Y; *n. blue jay, 1Y; e. crow, 2Y; *black-capped chickadee, 4Y; *red-breasted nuthatch, 1P; *brown creeper, 1Y; winter wren, 1UM; catbird, 1P; brown thrasher, 1P; e. robin, 8Y (2N); e. hermit thrush, 7Y; veery, 6P; cedar waxwing, 2P; blue-headed vireo, 3P; red-eyed vireo, 3P, 1N; black and white warbler, 5Y; Nashville warbler, 1Y; magnolia warbler, 3Y; black-throated blue warbler, 3Y; myrtle warbler, 1Y; black-throated green warbler, 6Y; blackburnian warbler, 10Y; chestnut-sided warbler, 6Y; oven-bird, 5P, 1Y; n. yellow-throat, 2Y; Canada warbler, 7Y; redbstart, 2P, 2Y; scarlet tanager, 1P, 1Y; rose-breasted grosbeak, 1P; indigo bunting, 2P, 1Y; e. purple finch, 1Y; e. goldfinch, 3P; slate-colored junco, 2P, 6Y; e. chipping sparrow, 3Y; white-throated sparrow, 9Y; e. song sparrow, 4Y. Total: 47 species, 147.5 pairs. Density: 295 pairs per 100 acres (154 in 1934; 150 in 1936; 170 in 1939; 171 in 1940; 190 in 1941; 225 in 1942; 268 in 1943). Frequent visitors: e. sparrow hawk, 1P; e. whip-poor-will, 1P; oven-bird, 1P; Canada warbler, 1P; scarlet tanager, 1P; rose-breasted grosbeak, 1P. Total: 6 species, 6 pairs. Comment: Increased growth of deciduous trees may account for the numbers of chestnut-sided and Canada warblers and redbstarts. Bushes on denuded areas, which have now reached a height of 3 or 4 feet, furnished a breeding site for the pair of brown thrashers (new to the area) and were responsible for the increase of song sparrows. Growth of some of the larger hemlocks that survived the hurricane may account for the return to almost former numbers of the blackburnian warbler.—WENDELL P. SMITH, Wells River, Vt.